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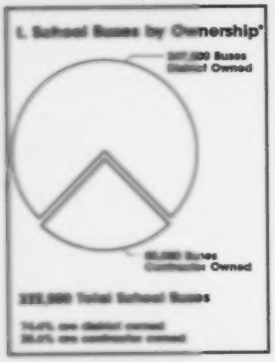

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Industry Statistics

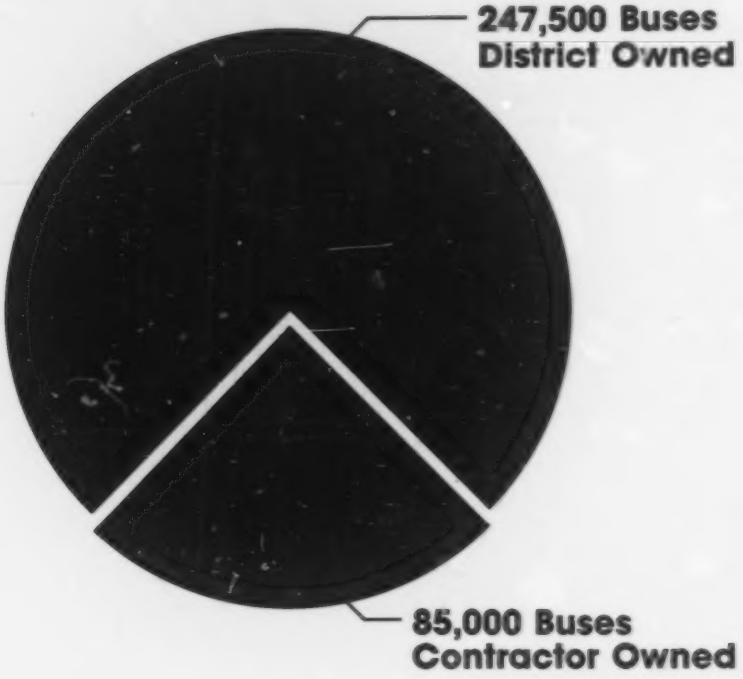
School Transportation in 1982-83

Based on reports from State Departments of Education. Prepared by The National Association State Directors of Pupil Transportation Services and Bobit Publishing Research Dept.

State	Pupils Transported at Public Expense	Type Type I	Type II	Ownership Public Operated	Contractor Operated	Total Number of Buses	Transportation Expenditures Including Capital Outlay
Alabama	457,573	6,446	175	6,393	228	6,621	$ 53,691,118
Alaska	40,450	463	114	177	460	57	20,158,118
Arizona	183,243	2,925	344	3,269	68	3,337	46,448,478
Arkansas	262,148	3,969	122	4,091		4,091	44,250,331
California	867,549	12,255	5,305	11,783	5,777	17,560	352,755,788
Colorado	221,155	3,611	222	3,604	229	3,833	52,403,146
Connecticut	Unknown	3,822	672	268	4,226	4,494	83,467,351
Delaware	83,775	1,241	33	376	898	1,274	23,715,703
Dist. of Col.	2,600	158	N/A	158	N/A	158	Unavailable
Florida	933,025	N/A	N/A	6,973	542	7,515	149,119,675
Georgia	809,000	N/A	N/A	8,800	266	9,066	110,000,000
Hawaii	39,613	504	216	18	702	720	14,196,000
Idaho	118,960	1,804	200	1,343	661	2,004	22,275,585
Illinois	1,000,957	N/A	N/A	7,778	6,013	13,791	152,912,642
Indiana	675,349	N/A	N/A	N/A	N/A	10,000	124,975,400
Iowa	256,243	6,081	684	6,554	211	6,765	59,589,995
Kansas	159,425	4,388	526	3,737	1,177	4,914	44,739,187
Kentucky	461,200	6,999	392	7,144	247	7,391	91,678,549
Louisiana	609,358	7,201	272	3,348	4,125	7,473	110,424,535[1]
Maine	165,798	1,989	238	1,819	408	2,227	34,281,334
Maryland	447,048	4,680	170	2,271	2,579	4,850	109,988,406
Massachusetts	591,349[2]	5,582	562	1,729	4,415	6,144	128,222,653
Michigan	985,559	11,817	1,851	13,668		13,668	200,000,000[1]
Minnesota	790,337	8,247	1,435	4,579	5,103	9,682	139,199,759
Mississippi	361,261	5,046	372	5,200	218	5,418	54,974,926
Missouri	455,954	N/A	N/A	5,902	3,340	9,242	72,890,502
Montana	56,920	N/A	N/A	683	602	1,285	5,205,878
Nebraska	57,417	2,280	856	N/A	N/A	3,136	31,464,330
Nevada	53,442	804	54	858		858	Unavailable
New Hampshire	92,612	1,476	307	266	1,517	1,783	13,358,069
New Jersey	643,026	7,854	4,533	5,176	7,211	12,387	Unavailable
New Mexico	130,030[2]	1,634	362	532	1,464	1,996	38,975,126
New York	1,977,152	16,812	8,187	12,859	12,140	24,999	638,520,561
North Carolina	733,591	12,759	0	12,759		12,759	89,031,307
North Dakota	48,051	1,278	169	1,104	343	1,447	22,736,548
Ohio	1,310,127	14,120	380	13,968	432	14,400	234,306,172
Oklahoma	288,058	6,105	60	6,047	118	6,165	73,124,760
Oregon	236,688	3,817	325	2,917	1,225	4,142	65,997,463
Pennsylvania	1,432,294	13,866	1,352	5,316	9,902	15,218	Unavailable
Rhode Island	102,151	N/A	N/A		1,316	1,316	Unavailable
South Carolina	407,411[2]	6,013	895	6,570	338	6,908	42,219,238
South Dakota	30,658	1,093	109	798	404	1,202	15,803,218
Tennessee	569,900	5,998	366	5,001	1,363	6,364	74,554,158
Texas	925,469	18,236	694	18,901	29	18,930	245,904,358
Utah	118,615	1,270	158	1,364	64	1,428	17,529,720
Vermont	71,748	998	195	655	538	1,193	14,913,368
Virginia	726,137	10,269	354	10,395	228	10,623	111,698,325
Washington	379,868	236	5,683	5,286	633	5,919	63,539,040
West Virginia	289,474	N/A	N/A	3,491	59	3,550	69,115,110[1]
Wisconsin	467,046	6,858	N/A	1,989	4,869	6,858	111,975,171
Wyoming	42,506	1,228	131	1,309	50	1,359	23,551,038
Manitoba	56,251	1,613	231	1,552	292	1,844	27,576,529
Guam	31,000	188	N/A	188	N/A	188	4,300,000
Puerto Rico	166,304	562	805	675	692	1,367	15,833,837
Saipan	1,320	13	1	14		14	243,000
TOTALS	**20,952,506**	**208,853**	**50,556**	**224,106**	**76,980**	**332,453**	**$3,565,046,073**

[1] Does not include capital outlay.
[2] 1981-1982 Data.

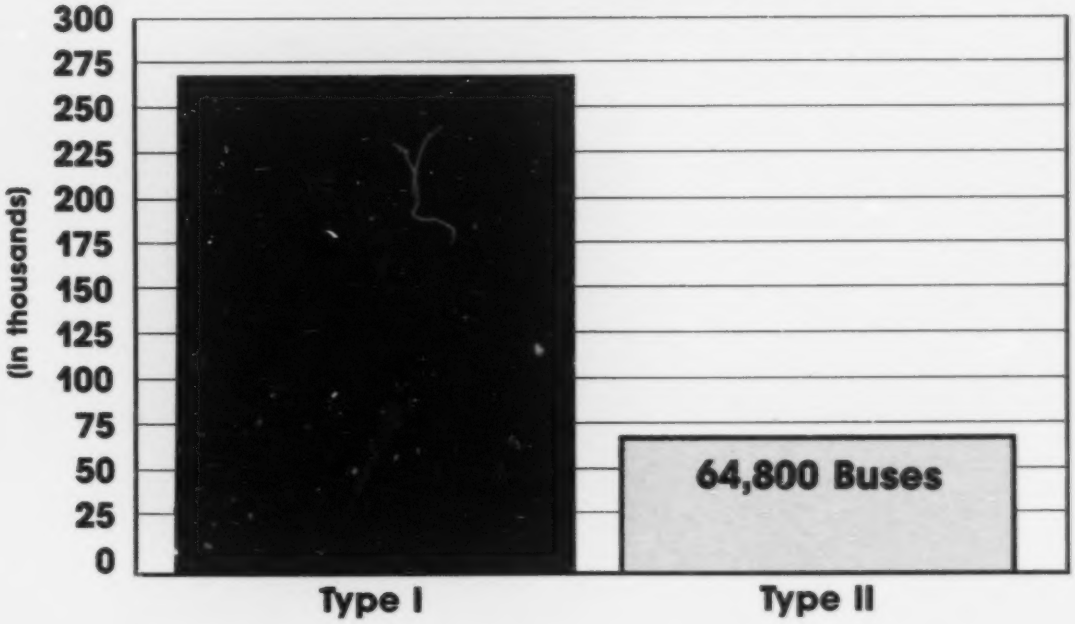
I. School Buses by Ownership*



332,500 Total School Buses

74.4% are district owned
25.6% are contractor owned

II. School Buses by Type*



All figures adjusted to include non-designated vehicles (listed as N/A in State Director report).

Accidents By State

State	Vehicles	Annual Bus Mileage (000)	Pupils Transp. Daily	Type of School Bus Accident				Prop. Damage Only Acc.	Persons Injured	
				Total[a]	Other Veh.	Non-coll.	Fixed Obj.		Total	Pupils
U.S.				**48,000**	**38,000**	**1,500**	**2,400**	**46,000**	**6,000**	**3,300**
Alabama	6,621	53,045	457,573	400	...	...	...	344	...	...
Alaska	580	7,000	38,000	102	85	1	15	86	33	...
Arizona	3,269	27,947	197,246	166	141	4	3	118	94	32
Arkansas	4,082	34,148	265,808	246	90	1	0	213	68	67
California	17,560	247,638	867,449	1,477	1,065	4	97	1,179	602	286
Colorado	5,013	40,394	221,155	126	...	...	...	...	32	29
Connecticut	4,594	...	...	821	776	1	37	736	135	49
Delaware	1,255	15,366	77,790	96	73	1	10	82	21	14
Dist. of Col.	158	175	4,000	58	...	...	...	...	7	2
Florida	7,531	130,075	779,008	652	484	1	6	620	53	18
Georgia	10,000	92,500	785,216	...	...	...	...	...	268	207
Hawaii	...	...	...	...	...	...	...	...	...	...
Idaho	2,004	17,641	118,960	78	70	4	0	26	52	44
Illinois	14,758	169,874	887,174	2,087	1,996	16	35	1,704	721	337
Indiana	10,143	59,355	675,349	527	...	...	...	...	172	60
Iowa	6,765	62,475	256,243	439	313	15	95	352	84	36
Kansas	4,914	50,000	159,425	262	229	10	12	193	112	22
Kentucky	...	70,495	461,167	838	718	5	43	695	234	130
Louisiana	7,473	66,381	580,246	755	703	20	19	723	37	21
Maine	2,241	25,859	165,798	135	119	1	13	107	47	17
Maryland	4,850	71,921	447,084	977	847	0	84	...	80	17
Massachusetts	7,281	60,473	491,755	1,059	...	...	...	...	320	212
Michigan	...	116,000	...	1,356	1,239	11	45	1,028	336	96
Minnesota	9,923	90,170	709,337	694	591	1	22	525	...	...
Mississippi	5,418	41,082	361,261	344	319	4	16	314	89	72
Missouri	8,878	87,432	455,927	446	385	17	26	375	219	171
Montana	1,285	16,784	56,920	70	56	3	10	66	4	3
Nebraska	3,444	29,059	57,417	100	...	...	...	...	...	...
Nevada	1,059	11,048	53,033	46	45	0	1	...	...	...
New Hampshire	1,783	11,000	96,000	137	124	0	6	116	48	34
New Jersey	12,600	126,000	645,000	543	468	8	25	273	269	211
New Mexico	1,996	22,465	130,030	174	156	3	8	148	39	18
New York	26,015	155,835	1,889,583	526	416	24	15	314	367	258
North Carolina	12,759	109,251	725,521	1,079	848	122	4	760	547	482
North Dakota	2,110	25,283	48,051	46	37	4	2	37	27	22
Ohio	14,406	149,845	1,310,127	1,343	...	...	...	989	350	350
Oklahoma	6,159	58,439	288,058	413	362	3	23	311	102	59
Oregon	4,142	40,159	236,688	350	288	3	54	329	39	21
Pennsylvania	17,998	19,885	1,432,294	1,661	1,435	31	154	...	323	110
Rhode Island	1,316	14,940	102,151	115	110	0	4	101	14	10
South Carolina	6,018	59,575	437,971	738	646	44	19	715	413	349
South Dakota	798	17,503	30,658	70	55	3	6	61	46	45
Tennessee	6,364	59,985	569,900	657	619	18	103	556	123	106
Texas	27,235	157,759	925,469	1,261	1,116	5	28	943	1,165	538
Utah	1,406	14,952	118,615	66	52	0	8	62	3	3
Vermont	1,246	11,414	72,581	63	...	...	...	57	...	...
Virginia	9,107	79,265	722,666	680	599	2	54	562	199	108
Washington	6,286	63,025	350,000	256	240	0	10	169	166	57
West Virginia	2,924	37,269	289,474	606	489	2	115	591	31	23
Wisconsin	6,858	75,234	467,046	539	430	5	1	413	194	15
Wyoming	1,359	16,712	42,506	37	33	0	4	34	3	0

Source: State departments of education and state traffic authorities. Most reports cover 1982-1983 school year or 1983 calendar year. U.S. totals are National Safety Council estimates for the calendar year 1983.
[a]Totals include additional accident types not shown separately.
[b]Based on Federal Highway Administration estimates.

Growth Of School Transportation In The United States

		Number of Pupils Transported	Number of Vehicles Used	Pupils Per Vehicle	Expenditure*	Expenditure Per Pupil
National Association of State Directors of Pupil Transportation Services	1982-83	19,823,716	300,094	66.0	$3,565,046,073	$179.83
	1981-82	22,836,272	335,160	68.1	4,821,783,550	211.10
	1980-81	22,598,975	334,461	67.6	4,125,443,607	182.50
	1979-80	22,578,280	329,808	68.5	3,894,893,829	172.50
	1978-79	22,882,191	323,333	70.8	3,341,035,199	146.01
	1977-78	21,923,780	315,489	69.5	2,880,513,030	131.39
	1976-77	23,156,006	298,173	77.7	2,666,446,831	115.15
	1975-76	22,757,316	312,030	72.9	2,285,840,977	100.44
	1974-75	22,398,556	282,834	79.2	2,000,991,592	89.33
	1973-74	21,169,633	271,552	77.9	1,537,148,313	72.61
	1972-73	20,791,737	262,579	79.2	1,407,472,462	67.62
	1971-72	20,047,589	257,804	77.8	1,324,740,407	66.02
	1970-71	19,191,483	245,608	78.1	1,178,910,190	61.82
	1969-70	18,752,735	239,973	78.1	966,135,767	51.51
National Education Association	1968-69	18,467,944	238,102	77.6	901,353,107	48.80
	1967-68	17,271,718	230,578	74.9	822,595,699	47.62
	1966-67	16,684,922	221,722	75.3	763,600,617	45.76
	1965-66	16,423,396	210,692	77.9	696,325,421	42.40
U.S. Office of Education	1964-65	15,413,000	206,000	74.8	642,627,000	41.69
	1963-64	15,559,524	200,116	77.7	612,310,333	39.35
	1962-63	14,247,753	195,397	72.9	578,017,634	40.57
	1961-62	13,687,547	191,160	71.6	540,168,114	39.46
	1960-61	13,106,779	185,869	70.5	505,754,515	38.59

*Five states did not report data; data from three states based on 1981-82 figures. Expenditures include purchase of equipment and tools, salaries, maintenance, supplies and fixed charges, such as licenses, drivers' physical examinations, insurance, etc.

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school bus fleet

1985 State Safety Report

Why Laidlaw Acquired ARA

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Photo of Carpenter's Clipper by Brewer, Jones & Feldman, Inc.

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SBF Survey Looks At The Danger Zone

More than a decade after NHTSA proposed safety standards, the nation's State Directors of Pupil transportation report that progress is being made implementing Standard 17.

Driver training is not required for school bus drivers in 10 states, according to a recent survey by SCHOOL BUS FLEET magazine. Within these 10 states there are 49,193 Type I and Type II school buses daily carrying 2,897,925 school children. This finding comes despite the fact that federal Standard 17 — which encouraged states to adopt mandatory driver training along with other safety programs — was issued by the National Highway Traffic Safety Administration (NHTSA) 12 years ago this month.

The State Director's Survey reported here was conducted by the editors of SCHOOL BUS FLEET early in December 1984. Survey forms were sent to all 50 State Directors of Pupil Transportation. A second mailing was sent to directors who failed to reply by the pre-Christmas deadline. Altogether 47 directors, representing 47 states, eventually submitted data.

The objective of the survey was to examine the safety practices, state laws, and regulations that have direct bearing on school bus loading and unloading procedures.

The death zone

It's well known among pupil transportation experts that injuries and fatalities in the so-called death or danger zone — that area immediately to the front, sides, and rear of a stopped school bus — now represents a greater hazard to the safety of school children than fatalities caused by passing vehicles or occurring inside the school bus as a result of a vehicular accident. However that pattern has not always been thus.

According to the annual Kansas DOT Loading and Unloading Survey, vehicles passing stopped school buses killed 45 youngsters in 1970; that figure declined through the decade, reaching seven fatalities by 1980, though it has grown some since then.

For the 1982-83 school year K-DOT reported that 17 youngsters were fatally injured by a school bus while in the death zone; that figure also declined more than half from an alarmingly high 38 fatalities in 1973.

Meanwhile the National Safety Council's last Accident Facts study reported that 20 percent of all school bus fatalities in 1983 occurred *inside the school bus*, while the remainder occurred a pedestrian fatalities *outside the bus*. This is less than half the rate reported in 1974, for instance, in which 39 percent of all school bus fatalities occurred inside the school bus. Most industry experts cite NHTSA's 1978 regulation requiring high-back seats and compartmentalization as the most important factors contributing to the sharp decline.

K-DOT and NSC unfortunately use different methodologies and different definitions, so a precise comparison between the two reports cannot be made. Nevertheless the pattern now clearly reveals that the greatest danger to the children does not stem from accidents while the children are inside the school bus, nor for that matter from passing motorists. Great strides have been made in the last decade-and-a-half to reduce these kinds of school bus fatalities. The greater risk now is what happens as children board and exit the school bus.

SCHOOL BUS FLEET magazine surveyed State Directors of Pupil Transportation in an effort to learn what progress was being made to improve safety in the danger zone.

During the past year the debate over whether seat belts ought to be mandatory in Type I school buses dominated most discussions about pupil transportation safety. The editors of this magazine came to the conclusion that the seat belt debate

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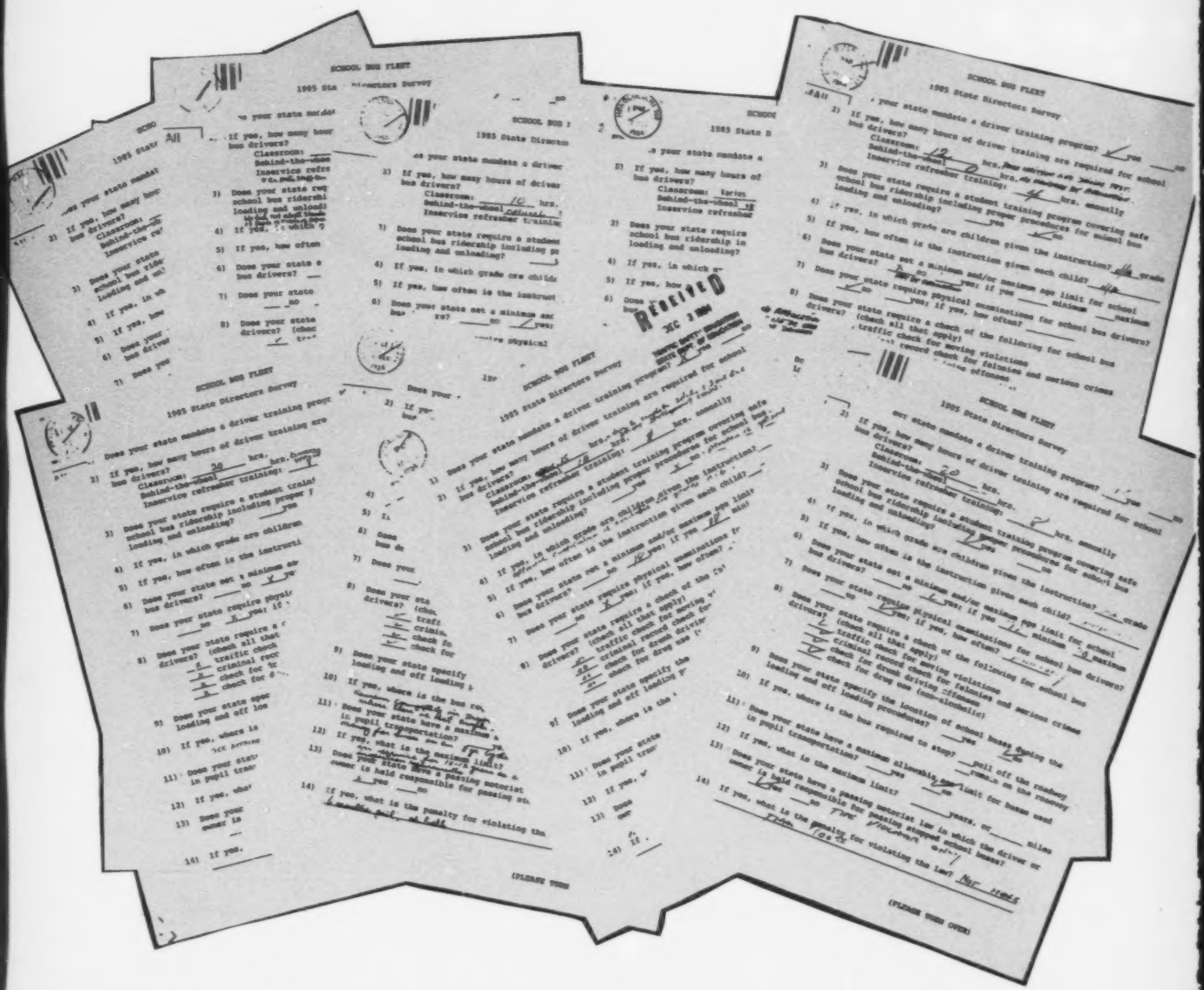
— while vitally important and potentially significant in the fight for improved safety — shouldered aside discussion and action on a host of other safety proposals. The SBF State Director's Survey examines what's occurring with regard to some of the Standard 17-type concepts such as better driver training, passing motorist laws, whether states have mandated some of the many safety equipment devices that are available from industry suppliers, etc. Survey results disclose an absence of uniformity among the states on Standard 17 proposals.



A wide disparity

For example, of the 37 states which mandate training for school bus drivers, classroom instruction averages 14.4 hours, behind the wheel training 5.1 hours, and annual in-service training of 7.7 hours. However the amount of training varies widely. West Virginia requires 30 hours of classroom training while nearby Maryland only required six; California required 20 hours of behind the wheel, while Connecticut only requires four.

Annual physical examinations of school bus drivers are required in 30 states and bi-annual exams in 11 others. Three states don't require any physical examination at all; one only requires an exam once every three years, while another only once every five years. Two states reported they increase the frequency of examinations to bi-annual once the drivers reach 50 years of age.

Responsibility for safe behavior in the death zone doesn't rest solely with the school bus driver however. Thus it is somewhat ironic that only 20 states require student training covering safe school bus ridership, including proper procedures for school bus loading and unloading; of these, only 15 require training twice yearly. Meanwhile, 24 states don't require any student training at all.

continued

Passing motorist laws

Although the incidence of fatalities caused by passing automobiles and trucks has declined markedly, one of the hottest topics throughout pupil transportation these days is what to do about motorists who ignore stopped school buses. We asked a series of questions relating to this issue.

Forty-one states report they have passing motorist laws on their books in which driver or owner is held responsible for passing stopped school buses. Of these, 15 report their state will accept reporting the license plate number of the offending vehicles, while 27 others require positive identification of the automobile driver. Six state directors say passing motorist legislation is pending.

A follow-up question about the effectiveness of enforcement if the passing motorist law brought these responses: three state directors described enforcement as "vigorous;" 16 said enforcement was "moderate but adequate," while 19 state directors checked "inadequate" to describe enforcement of the law by the judicial system in their state.

A further query about the actual number of convictions for violations of the passing motorist law in 1985 year-to-date only saw four state directors supply information for their state! These four states — Connecticut, Indiana, New Jersey, and Utah — averaged 1,395 convictions each, with Utah alone reporting 3,082 convictions.

Meanwhile state directors in nearly four-fifths of the states, representing fully 79 percent of all buses in the nation's school bus fleet, were unable even to answer the question! Here is how this came about: respondents were instructed to enter "not available" if their state had a passing motorist law *but data about the number of violations was not collected.* Altogether 39 state directors entered N/A. Clearly, the lack of response to this question indicates the judicial reporting procedures in these 39 states needs to be strengthened; state directors of pupil transportation ought to have access to this vital data.

To gain an idea of the manpower resources that state governments commit to pupil transportation, we asked directors to list the number of personnel employed in their office or department. After all, one of the key measurements in primary and secondary education is the ratio of pupils to teachers. We wanted to learn how many individuals — including the state director, driver training instructors, inspectors, and other administrative personnel — were employed reporting, testing, and enforcing the various requirements related to pupil transportation.

The answer on the average was 12.4 employees. Fully three-quarters of the states employ 10 or less people in pupil transportation! Based on the aggregate total of individual employees among the 46 reporting states, this computes to something like one state pupil transportation worker for every 36,800 school children.

Conclusion

What emerges from this study is clear. Adoption of the various provisions of Standard 17 is spotty. Certain of the provisions, such as the four light and eight light system and stop arms, are in widespread use, others widely ignored.

In spite of the uneven record, what's heartening is the dramatic decline in the number of pupil transportation fatalities among school age population. The NSC ranks school buses as the safest mode of transportation; only 0.02 deaths per 100 million passenger miles occurred during 1980-82.

Moreover, the fact that several safety related types of equipment were reported not to be mandatory suggests that safety in the death zone could improve sharply in a brief span merely by implementing some of these devices. The following article describes some of these technologies. Great strides have been made. Much remains to be done.

School Bus Safety Equipment Usage

	mandatory	not mandatory	optional	legislation pending
• 4 light system	13	27	0	0
• 8 light system	36	8	0	0
• stop arms	23	8	8	3
• swing-out crossing controls	5	21	18	1
• back up alarm system	6	19	18	1
• outside p.a. system	1	16	28	1
• strobe lights anywhere on bus	2	14	26	3
• two way radios	3	8	33	2
• convex side mirrors	25	3	14	1

Summary table shows the status of current legislation regarding safety equipment in each state.

School Bus Maintenance Practice Surveyed

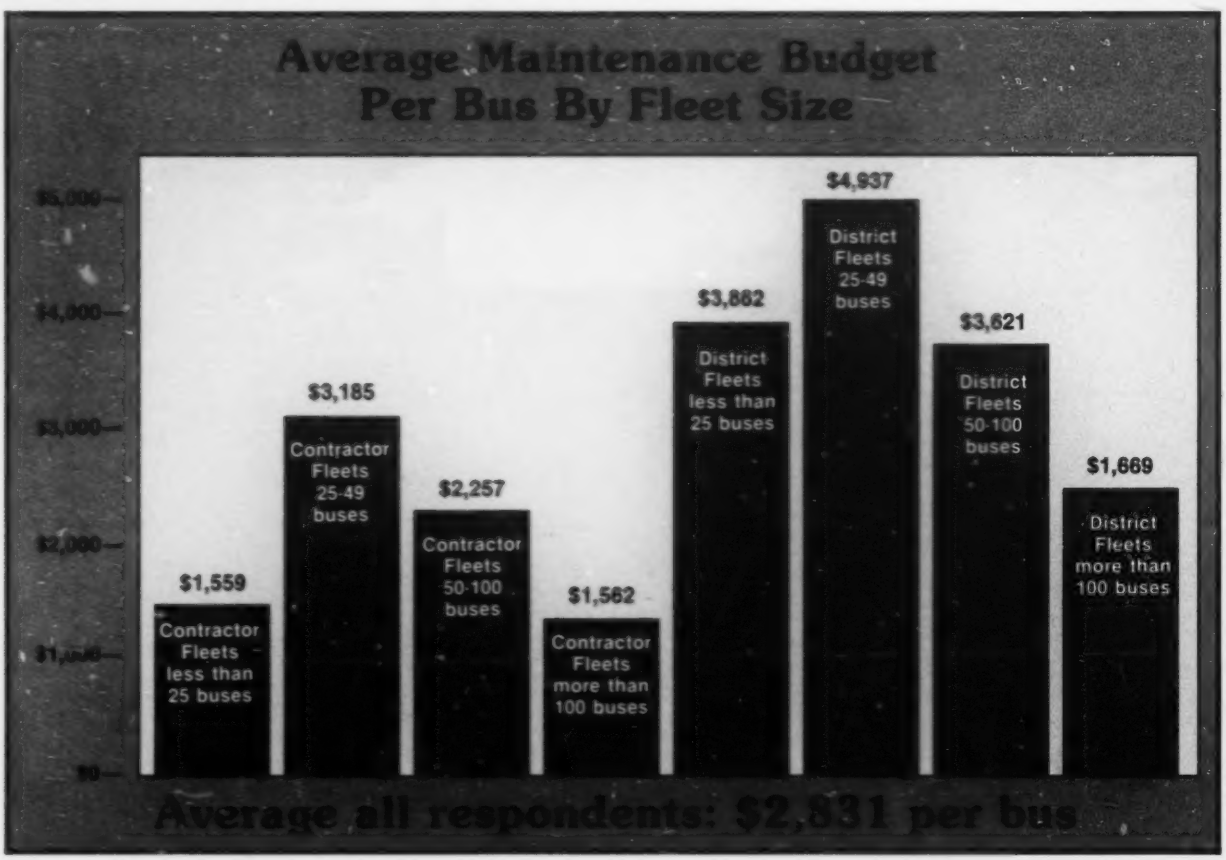
SCHOOL BUS FLEET finds a curious gap in maintenance costs between large and small fleets, and between contractors and school district operations.

The recent school bus maintenance survey conducted by SCHOOL BUS FLEET Magazine demonstrates the wide disparity of operating expenditures reported by maintenance managers. Despite similarities in procedures among those fleets reporting, cost results varied widely among every category of school bus operation.

The survey was conducted by editors of SCHOOL BUS FLEET last December. Survey questionnaires were mailed to 500 fleet managers throughout the U.S. Canadian contractors and districts were not surveyed.

Two-hundred-seven responses were returned, representing 7,918 contractor- and district-owned, Type 1 and Type 2 school buses. Survey responses, therefore, represented 41 percent of the number mailed to our readership. Despite the bus sample size the quality of responses were broad and varied; survey forms indicate a broad geographic representation. Operations with only three buses in their fleets responded as well as those with more than 2,000 buses.

The questionnaire was not designed to elicit information regarding practices and procedures on the shop floor. Instead we sought information that would reflect industry-wide maintenance policies. Hopefully the data will give the school bus industry greater insight and better



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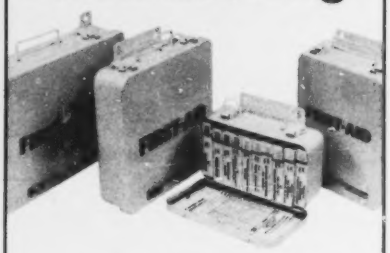

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information about the maintenance function.

The questions

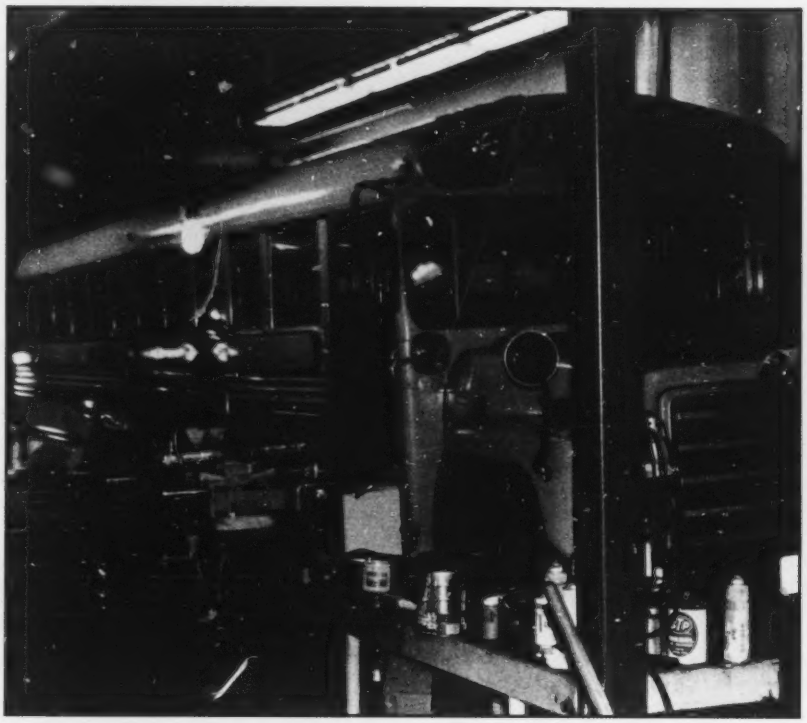
Maintenance officials were asked to supply the number of buses in their fleet by two types: those over 10,000 GVWR and under-10,000 GVWR school buses. We also asked average fleet age. We did not ask brand or model information however, nor what options with which vehicles were equipped. Readers should keep in mind that while these factors might have influenced individual responses, the survey only gathered aggregate data.

For purposes of comparison responses were divided by size and mix of fleet into eight categories. The categories are: district-owned fleets of less than 25 buses, those operating between 25 and 49 units, those comprised of between 50 to 99 vehicles, those district fleets of more than 100 vehicles, and contractor-owned operations categorized by the same four fleet sizes.

Maintenance budgets

Among respondents reporting budgets (see page 51) the average sum spent annually on maintenance per bus varied between contractor and school-owned fleets. The average sum spent per annum by contractors is $2,108, but the average for school districts is $3,522. This average was derived by dividing the total maintenance budgets reported (labor, parts, etc.) by the number of buses the districts and contractors reporting operate.

As noted earlier the most surprising aspect of the returns was the reported disparities. For example, small contractor fleets of 24 buses or less reported spending an average of $1,559 per bus annually on maintenance, while contractor fleets of 25 to 49 units reported $3,185 per bus.



A wide gap was found in square footage of maintenance space per bus between large and small fleets.

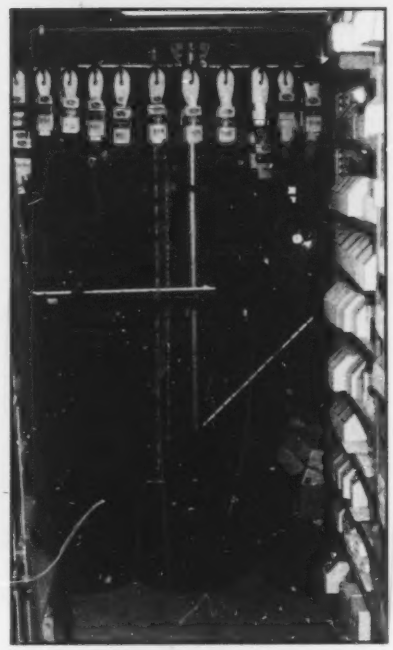
Yet contractors with 50 to 100 vehicles reported spending an average of $2,256 on maintenance per bus and contractor fleets larger than 100 units said that they spent $1,433 per bus. One plausible explanation is that as fleets become larger, contractors become more efficient and thus control their costs better.

The same pattern held true for the district-owned categories. For

fleets smaller than 25 units, the average maintenance expenditure per bus was reported to be $3,862; for operations of 25 to 49 vehicles, it was $4,937; for fleets of 50 to 100 buses, it was $3,621; and for fleets larger than 100 vehicles, it was $1,669.

It is not clear what accounts for this disparity particularly since these costs vary between fleet and ownership category without pattern. Fleet age has be to ruled out since the variance in average age of buses for each survey grouping reported is not consistent with the differences in maintenance per-bus costs. For example, smaller fleets (1-24 units) of contractors and districts averages 7.3 and 6.5 years, respectively.

When asked whether their current maintenance budgets increased or decreased relative to the previous year's budget (irrespective of whether the operation is on a calendar or fiscal year), virtually all respondents in all categories said theirs had increased. Spending rose by the overall industry average of 8.81 percent over expenditures in the previous year. With government-reported inflation of 4.6 percent factored in, contractors anddistricts indicated growth of 4.2 percent in their maintenance budgets.



Survey results revealed that the value of maintenance inventory varied inconsistently with fleet size.

Maintenance inventory

Of respondents that disclosed the dollar value of their maintenance inventory (see page 56), they said that contractors and districts stock an average of $629 worth of inventory per bus.

Again, as witn maintenance budgets, the value of inventory varies widely by fleet size and ownership. For example, district fleets with between 25 and 49 buses reported an average of $965 inventory per bus. Contractor fleets with between 25 and 49 buses, by contrast, reported the smallest average parts stockpile, $656 per vehicle.

In general, the number of mechanics and service personnel in shops rose as fleets got larger and if they were district operated rather than contractor owned. Contractors with fewer than 25 buses reported a curious average of 1.4 per fleet,

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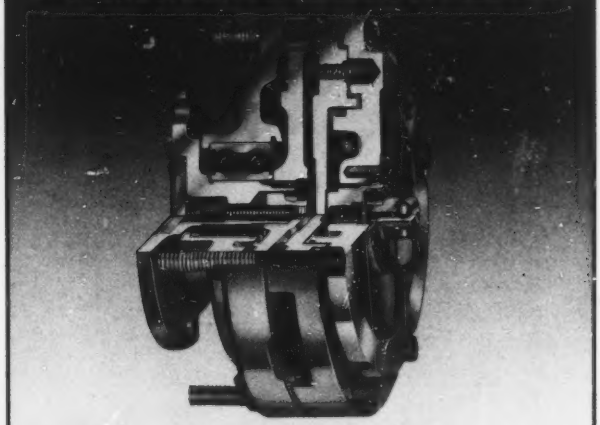

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while districts with more than 100 vehicles said that they employed on average of 34 per fleet, or one for every 19 buses.

Inspection programs

We also asked respondents about the frequency of both their pre-trip checks and their state's inspection rules and whether the inspections were made on the respondents' premises or elsewhere.

The survey found a slightly higher percentage of districts that have monthly state mandated inspections than the percentage of contractors that have a monthly state-mandated checks. Fifty-eight percent of districts said that monthly inspections were the rule; 49 percent of the contractors responding said that the state mandated monthly inspections. The second most common inspection period was quarterly. Thirty-six percent of the contractors said that the state mandated quarterly inspection, while the corresponding percentage for districts was 34.

The frequency of pre-trip inspections was another point treated in the questionnaire. Contractors were equally divided: 50 percent said that they conducted inspections before every run and 50 percent said that they performed checks daily. Of the districts answering the question, 59 percent said that they performed inspections before each trip, while 39 percent said that they made them daily.

"Fifty-seven percent of respondents favored state-mandated mechanic certification."

Specifically, we asked about how brake inspections were conducted. Fully 79 percent of districts responding said that they pulled the wheels for complete internal inspections, while 14 percent said that they examined the inspection plate only. Of the contractors, 74 percent said that they pulled the wheels. The second most frequent answer for the contractors, however, was the examination of both the inspection plate and pulling of the wheels; 20 percent of the contractors said they did both, while seven percent of the districts said they did both.

We asked participants to reveal if they had formalized, written preventative maintenance programs. As the fleets got larger, it is a greater likelihood that they do have PM procedures written out. Overall, 64.4 percent of contractors responding to the question said that they had written procedures, while 58.1 percent of the districts said that they had PM rules written.

Operations which do not have both on-site vehicle washing and fuel facilities comprise a minority, indicated the respondents. Sixty-four percent of managers surveyed said that they had on-site washing facilities and fully 85.9 percent said

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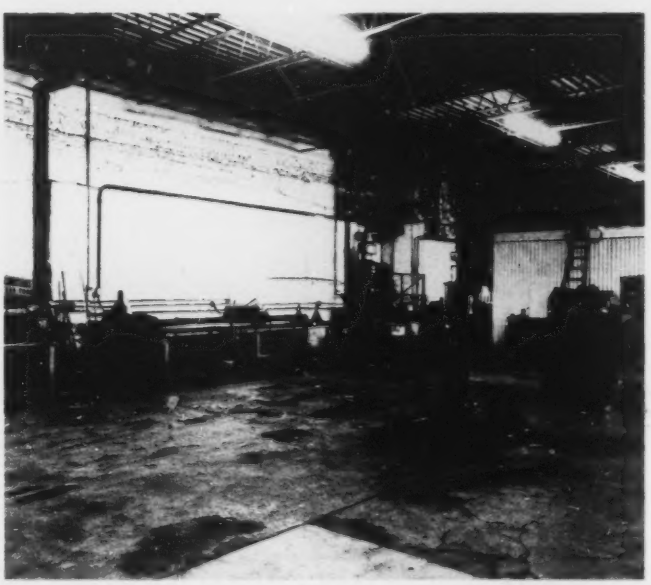

Robert L. Moss
Transportation Supervisor
Walton (N.Y.)
Central School District

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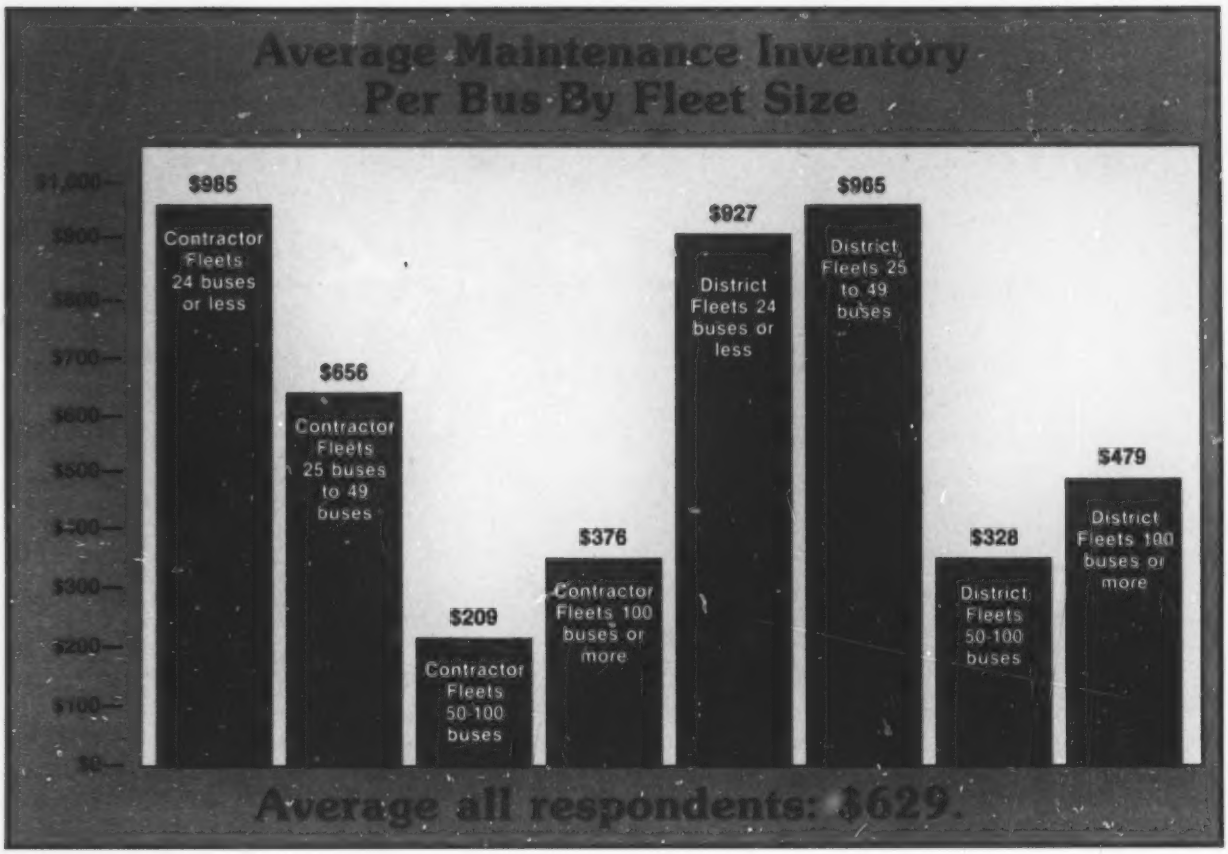

that they had on-site fueling.

Finally, we asked if our sample group thought that the federal government should mandate school bus mechanic training and certification, if the states should do it, or if there should be no requirements. An overwhelming majority — 57.6 percent — of both contractors and district managers felt that the states should mandate mechanic certification. By contrast, 35.8 percent said that the federal government should have mandatory certification, while 6.6 percent said that no government certification should be required.

Conclusions

Throughout the survey the one aspect that surfaced time and again was the wide disparity among size categories of fleets reporting and between school bus contractors and districts. This was a surprising finding. Student transportation is a relatively mature industry, and it is reasonable to expect that some common maintenance experiences would have evolved over the years.

Of course a number of variables mitigate against common answers including factors such as: fleet age; state specs on buses; whether the operation is located in an older, eastern urban center or a newer , more spread-out, western boom town; union versus non-union wage scale; size of fleet; etc. Still, the pattern of disparity shows up across a whole range of responses — budgets, square feet of maintenance space, value of maintenance inventory, and more.

Even taking the variables into account, though, shouldn't their be a greater degree of similarity of expenditures per bus? Take for instance total maintenance budget per bus. According to the data school bus contractors and districts must spend more on maintenance per bus as the fleet gets larger. But this "diseconomy of scale" reverses itself as the fleet grows to beyond 100 buses. Why is it that the "apparently" least effective fleets from a maintenance point of view are the 50-to-100-bus category for contractors and the 25-to-49-bus category for the district fleets?

How about square feet of maintenance space? The average for these same two size fleets was reported to be 278.5 square feet per fleet per bus for the 50-to-100- vehicle contractors versus 808 square feet per bus for the 24-to-49 district fleets. Again, the data leaves few clues to this anomaly.

The pattern of disparity argues forcefully for some uniform implementation by the school bus industry of the federal Standard 17 maintenance procedures, particularly since the federal administration and local taxpayers will likely continue to stress safety and economy. Armed with those procedures the school bus industry will be more effectively able to calculate and then present its case for better maintenance budgets. Moreover, uniformity of maintenance reporting will enable the supplier community to respond to industry needs more effectively.

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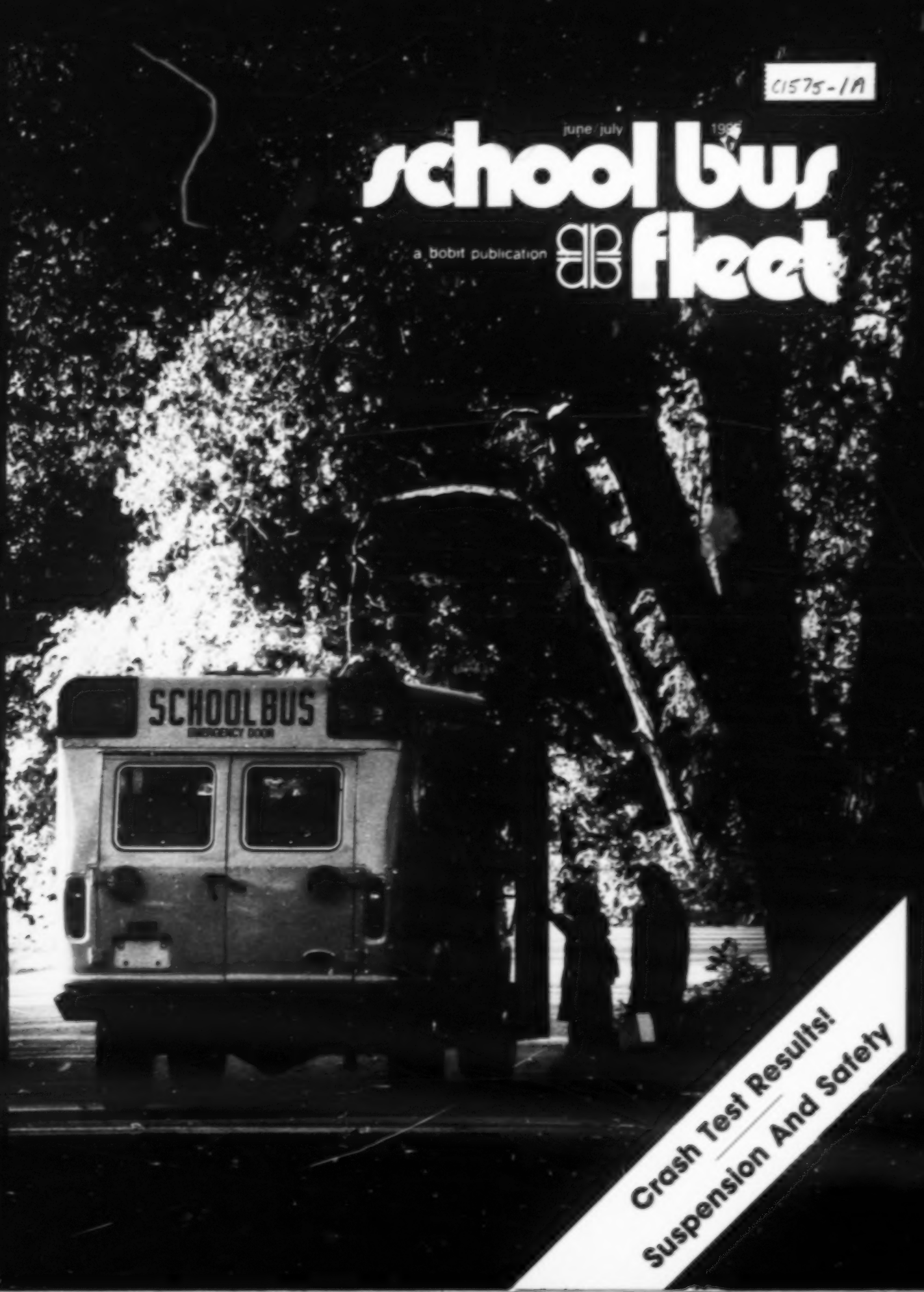

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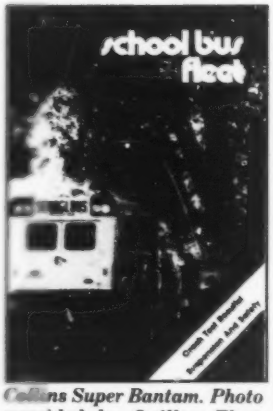

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Kids Need To Be Watched Too

A drop in passing vehicle-related fatalities is more than offset by a rise in school bus-caused fatalities.

By Roscoe Bernard

Whenever I learn of another child being killed by a school bus, I am tempted to emulate the often-quoted movie character Howard Beal, who in an agony of frustration, leaned from his window and shouted, "I'm mad as hell, and I'm not gonna take it anymore."

This seemingly facetious remark is not without merit because the number of children being killed by their own bus represents a terrible blight on an otherwise fantastic safety record. The blight can, in this writer's opinion, be substantially reduced if not totally eliminated.

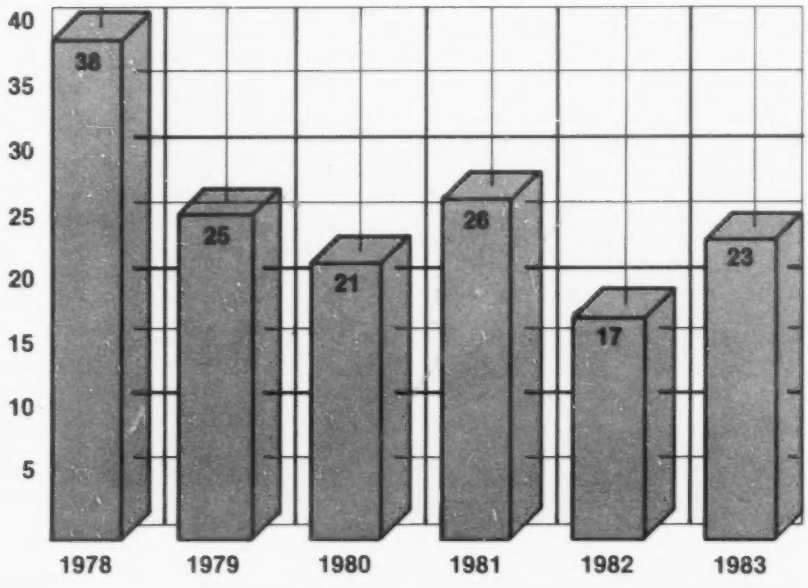
Although the school bus industry may point with pride to its overall safety record (National Safety Council Accident Facts, 1984 statistics show that the yellow school bus is the safest vehicle on the road), there is little pride in this one area. There is also no indication of appreciable improvement. Conversely, just when it seemed that there was a downward trend (see figure 1), the recently released School Bus Loading and Unloading Survey issued by the Kansas Department of Transportation reflects an alarming 35 percent increase over the preceding year.

The six year fatality average of 25 is relatively close to the average number killed by the vehicles passing a stopped school bus, i.e., 33, but the latter reflects a downward trend over the last few years (see graph 2).

We must address the question of why, in 1983-1984, our school bus drivers killed nearly three times as many children as did drivers of other vehicles in loading and unloading situations. Such statistics refute the argument that we have little control over those who jeopardize safety by passing a stopped school bus.

In recent years there has been a major push by individual companies, school districts, and state and federal organizations to increase public awareness. Thousands of dollars and countless man hours have gone into this effort and there, fortunately, is no indication that interest is abating. The market is presently saturated with safety devices ranging from crossing gates to radar screens, and experiments with strobe lights and signaling devices are on-going. Many states have either passed new legislation to deal with passing violations or have revised and strengthened existing laws already in place. In short, there has been a great deal of emphasis in this particular area, and it appears that progress is being made. Although it's probably premature to predict a trend, there has been a steady decline in this particular type of fatality. Its total elimination, however, is unrealistic for the simple reason that we don't have complete control. In some instances we have no control at all, and drivers are very often frus-

GRAPH I
SCHOOL CHILDREN KILLED BY SCHOOL BUS



trated by their inability to protect their children.

The reverse is true with children being killed by their own school bus drivers. With the possible exception of child unpredictability, our drivers *do* have absolute control. They need *never* run over a child who is in the process of loading or unloading. They *are* capable of *complete control* because they alone control the movement of the vehicle.

A continuing tragedy

The unremarkable aspect of this particular brand of genocide (it's systematic if not deliberate) is that findings continue to reveal identical patterns: "Child dropped item in front of bus and was in the process of picking it up when struck by the bus." Or, "Student struck by the rear wheels of the bus after departing on trip home." Or, "Student crossing in front of stopped bus and bent over to pick up some dropped papers."

The tragic statements go on, year after year. The only change involves the item being retrieved: A construction paper Christmas tree, Valentine, Easter bunny, or a bright orange pumpkin. These are signs of the season — the dangerous season between late August and early June. They clearly tell us that kids are kids, and they need to be watched over and protected by supposedly mature, intelligent adults.

This writer believes such an assumption is reasonable or else maturity would occur at a much earlier age. Nearly 80 percent of all children killed by their own bus or passing motorists are under 10 years of age. Such statistics cause some to conclude that children should not be exposed to traffic before they have had the maturity to cope with it.

At one time or another we have all witnessed a child's excitement or rampant emotion during special times likes Halloween, Christmas or Easter. They really do not need the additional emphasis to let us know that they're kids; they're already supercharged and unpredictable — but given this extra shot of adrenaline it's small wonder that they often act without benefit of thought or reason. The seasonal aspect should tell us nothing more than that we should redouble our awareness during these special times.

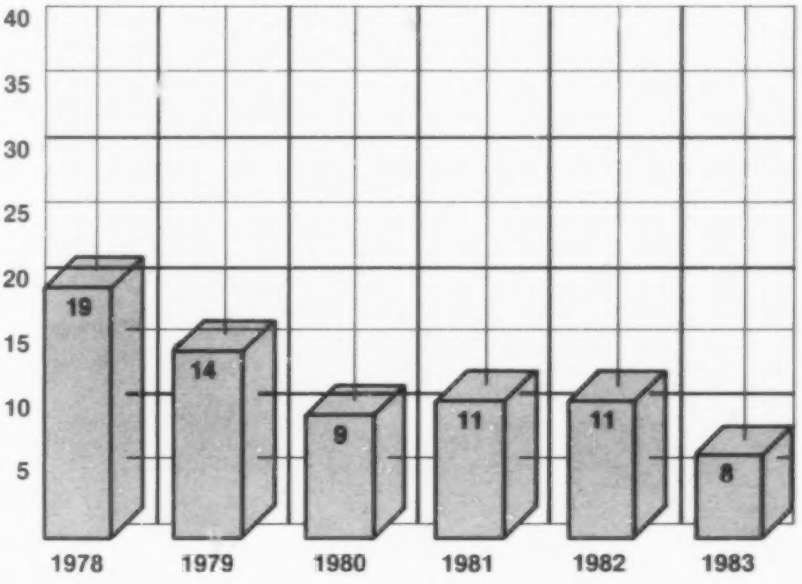
Brainstorming for solutions

During a recent brainstorming session fellow staff members discussed the impractical aspects of my contention that it is altogether possible to erase this statistic.

Among the several arguments presented was the suggestion that school bus drivers could not realistically be expected to always count and keep track of each child entering or leaving the bus. It was pointed out that in many instances, primarily in heavily populated urban areas, there are frequent bus stops during which numerous children load and unload. These children frequently disperse rapidly and go in many different directions. In like manner, when loading, they sometimes approach the bus in the same fashion. Additionally, these large stops are very often concentrated in the high density areas typified by trailer courts and public housing developments. These areas are often-times associated with depressed conditions and numerous pre-school children around the bus stops. Unfortunately, a subsequent decline in parental supervision and insistence on basic rules and regulations associated with proper loading and unloading procedures is frequently noted.

Although the forgoing is unfortunate, it should be all the more reason why drivers should never fail to count and record the exact number and location of all children and, under no circumstances, move until each is personally accounted for.

GRAPH II
SCHOOL CHILDREN KILLED
BY VEHICLE PASSING SCHOOL BUS



Another very valid argument presented was the suggestion that such accounting would be difficult at times because of additional stress placed upon already harassed drivers in heavy traffic conditions. Any additional delays can only add to already dangerous situations involving waiting motorists and passing violations. Here again I submit that this is all the more reason why there should be accurate accounting for every child.

Insofaras community relations, a great deal may be said for keeping everyone happy, or reasonably so, but at what cost? Misplaced values

are possible. It is far more important that we are absolutely certain we're not going to run over an unsuspecting child than it is to concern ourselves with the momentary delay to a motorist. There should never be any question.

Finally, it was suggested that the driver has the additional responsibility to those whose name is on the paycheck, i.e., the owner-operator or board of education. The inevitable suggestion that schedules must be met at all costs was made. Unfortunately, this is more truth than fiction; so long as we place anything before safety, nothing will change. I submit that the time of decisions is long overdue; the safety of children must never be compromised.

Reviewing the situation

It seems to me that we are continually looking at the situation in retrospect. Webster defines "retrospect" as a review or meditation of past events. In view of the record, we need to do more than meditate, and we must dwell on the future rather than the past. We can no longer accept the premise that these are unfortunate but unavoidable accidents, and they are going to happen regardless of what or anything we can do.

At the risk of sounding like a complete monster, let me suggest that in addition to letters of sympathy to distraught bus drivers, we should consider a letter or reprimand as well. To date, rarely, if ever, has there been any stigma attached to such an unfortunate tragedy other than the personal trauma and psychological burden that will never be erased.

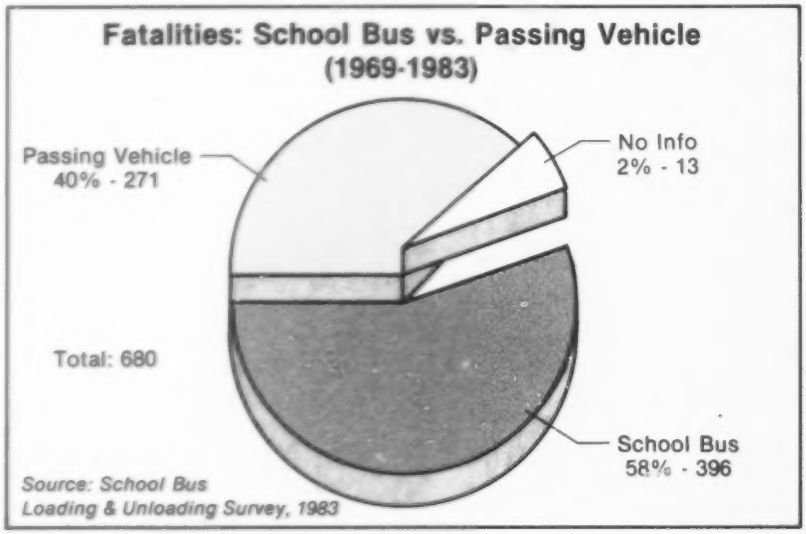
The burden of responsibility rests squarely on the shoulders of the child who is, of course, no longer available to plead his case. What defense do we have anyway? After all, he's only a six-year-old who is supposed to know better than to ever bend down in front of a vehicle to pick up some dropped papers. And then too, everyone who has ever driven a school bus or is remotely associated with school bus transportation knows that the beleagured school bus driver has too many responsibilities and distractions already. They can't be held responsible, right? WRONG — if they cannot be then who can? Although nothing will ever bring back the child or ease the pain of driver and parents, we should not fail to use every means at our disposal to draw attention to such senseless tragedies.

It's an accepted fact that the rear and sides of school buses are oftentimes difficult, if not impossible, to observe, but just as it is true with lights, stop arms and cross arms, a great deal of time and money has been spent perfecting mirrors that make it relatively easy to observe the area in front of a conventional school bus. Many states and districts now require a double set of mirrors on both right and left fenders which, if properly adjusted, enable the driver to clearly observe any object in front of the vehicle as well as along both sides.

One major bus body builder (American Transportation Corporation) has gone a step further in designing the new generation Patriot which noticeably enhances the driver's line of vision. It represents a substantial improvement in an area that has long plagued school bus operations and may well be a significant step in the right direction.

Many districts are becoming increasingly concerned, but unfortunately their heightened interest is frequently too late or too little.

I was disappointed when I read a recent article in the *Kansas City Star*, January 10, 1985, outlining a four-part safety program in the school district where a six-year-old was killed by her bus. The well-meaning district has focused its program on teaching school children about the possible dangers when they are near school buses, and the children will be taught from the manual the district has prepared. In addition, they will encourage children to take the manuals home and go over them with their parents. Possibly the most significant aspect of the entire plan is the involvement of the drivers, who will visit kindergarten through sixth grade classrooms to discuss safety. It has not, however, gone nearly far enough. Although my personal knowledge of this particular operation tells me that no effort will be too great insofaras ensuring that a similar tragedy will never occur, there is a decided void in the overall program. Everything they are doing is commendable, but they need to go much further. Drivers as well as children, parents and teachers, need to be heavily involved because they have the ultimate control. And what of school and transportation officials and board members? Where does their responsibility begin and end? School bus fatalities are everyone's responsibility. With total involvement this statistic can be eliminated.



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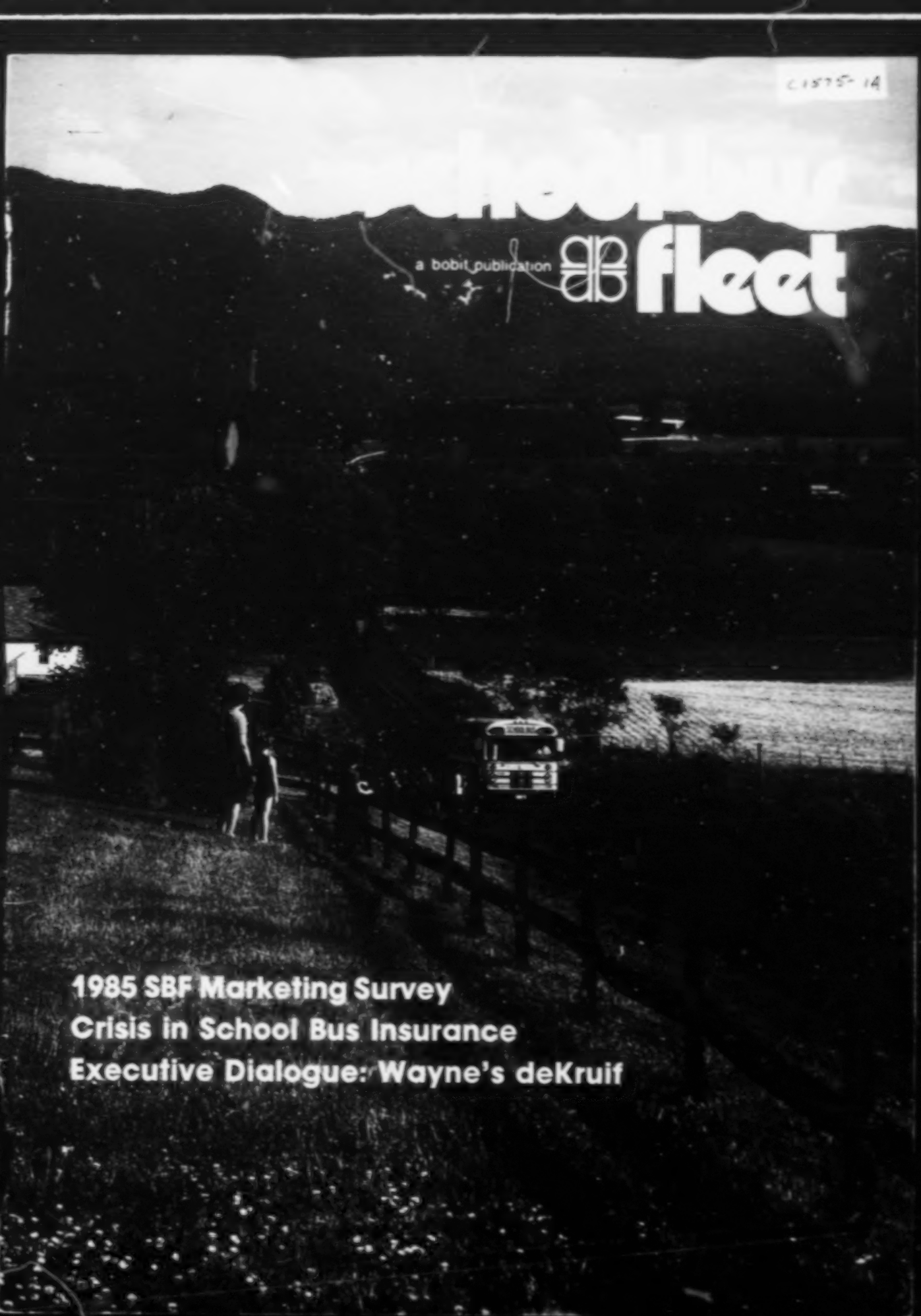

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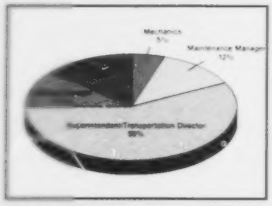

Marketing survey.

Buses on LPG.

Jack deKruif

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On the cover: Blue Bird's All American school bus. Photo courtesy of Erwin Harrison of Blue Bird Body Company.

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Survey Reveals Subtle Changes in Procurement Practices

The 1985 School Bus Fleet marketing survey indicates bus replacement age is inching up.

The nation's school bus fleet is aging. This is one of the conclusions to emerge from the just completed 1985 School Bus Fleet marketing survey; this is the second time the editors of the magazine conducted the study. The purpose of the survey was to examine buying patterns and preferences throughout the nearly $6 billion per year pupil transportation industry.

In key areas researched, such as replacement age and bus brand preference, significant changes were reported in the 1985 survey, compared to results reported in the similar survey conducted 18 months ago. In other areas, such as during what months bus specifications are written and the percent of gasoline-powered vs. diesel-powered buses, 1985 survey results were comparable.

The 1985 questionnaires were mailed on Bobit Publishing Company stationary to 493 fleet operators on the *School Bus Fleet* circulation list, on an Nth number basis. The four-page survey consisted of 40 questions; most were aided-recall questions with a handful being open-ended questions. Approximately 200 survey forms were returned; of these 187, or 38 percent, were correctly filled out and thus tabulated. This compares with 1,000 questionnaires mailed and an equivalent 38 percent response for the survey conducted in 1983.

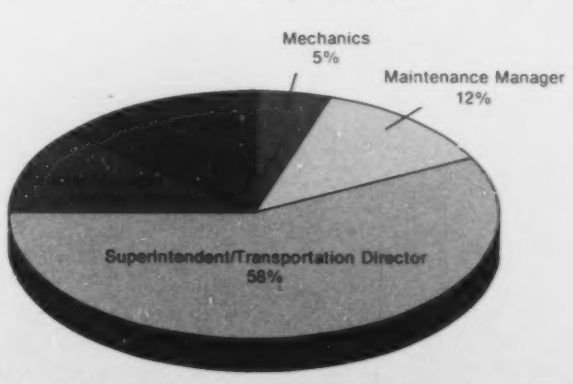
Based on *School Bus Fleet's* historical analysis, the response ratio to the current survey is an accurate representation of the pupil transportation industry; 75.4 percent of respondents say they represented publicly-owned school bus fleets and 24.6 percent represented privately- owned contractor fleets. In the previous survey 82 percent of respondents were school district fleets while 18 percent were contractor fleets.

Whether the shift in response ratio among respondents indicates changing ownership patterns throughout the industry is unclear from the data. However, as we'll note below, the responses to a handful of questions appears to reflect greater participation in the survey by contractors.

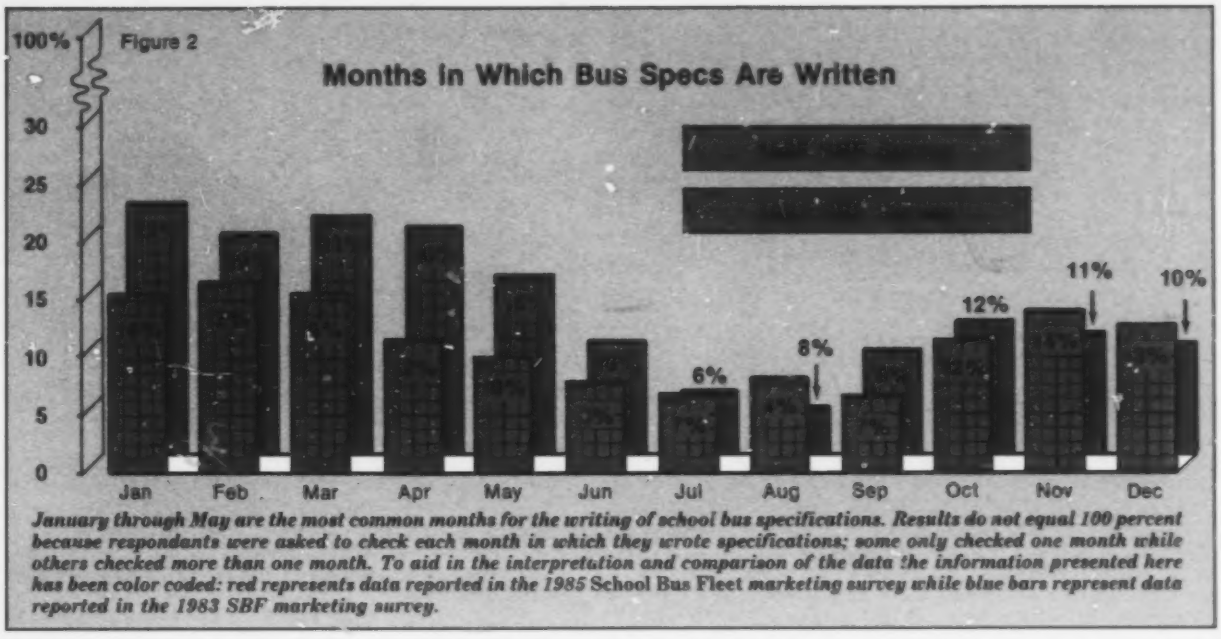
Furthermore the present survey represents 141 school district-owned fleets and 46 contractor-owned fleets. Together these 187 fleets report owning 10,271 school buses of all types.

Gasoline was the most common power plants of these buses (81 per-

Figure 1



In an effort to tabulate results by type of ownership of operation, respondents were asked to report their titles. Those who checked presidents, owners and general managers are reporting for contractor-owned fleets, while most others are reporting for district-owned fleets.



January through May are the most common months for the writing of school bus specifications. Results do not equal 100 percent because respondants were asked to check each month in which they wrote specifications; some only checked one month while others checked more than one month. To aid in the interpretation and comparison of the data the information presented here has been color coded: red represents data reported in the 1985 School Bus Fleet marketing survey while blue bars represent data reported in the 1983 SBF marketing survey.

cent), followed by diesel (16 percent) and propane/CNG (3 percent). These data indicate a slight change from the earlier survey in which 82.6 percent of the vehicles were gasoline powered while 13.2 percent were diesel powered; propane usage remained roughly the same.

Replacement Age

Among the most important data reported is how frequently school buses are retired from service. The answer, in brief: less frequently!

In our 1985 survey we asked respondants to supply replacement data by age, mileage and type of bus. Of the 102 fleets reporting ownership of van-type buses (representing 1086 vehicles), the mean life cycle was 9.9 years and 100,019 miles. Of the 164 fleets reporting ownership of conventionals (representing 8,399 vehicles), the mean life cycle was 12.2 years and 103,646 miles. Of the 24 fleets reporting ownership of transit-style coaches (representing 786 vehicles), the mean life cycle was 15.8 years and 156,041 miles.

Unfortunately, comparison of this data with the earlier survey is limited because 18 months ago the data was not sought by type of vehicle. Instead it was reported in the aggregate— that is as an average of all types of buses combined. Utilizing the same methodology, however, the mean bus age at replacement of all vehicles represented in the 1985 survey was reported at 12.6 years and 119,902 miles, compared to 10.4 years and 117,957 miles in late 1983.

Another important conclusion to emerge from the survey is that school buses are being driven further: respondents to the 1985 survey reported the average bus is being driven 16,412 miles per year, compared to 14,539 miles two years ago.

Clearly these data indicate the nation's school bus fleet is aging. A development that may reflect this trend appears in the next finding.

When asked when and how many school buses they planned to purchase, 80 percent of fleet operators report they will purchase a mean average of 6.7 buses each within the coming 12 months. Meanwhile 72 percent of fleet operators report they will purchase a mean average of 9.9 buses each within the coming 24 months.

Brand Preference

One area in which there was a significant change from the earlier survey was in bus brand preference. Fully 59.5 percent of all respondents said there district or company has a brand preference for particular bus manufacturer(s), while 40.5 percent said they had no such preference. This compares with 50 percent preference and 50 percent no-preference 18 months ago.

One reason for this trend is that a greater number of contractors participated in the survey this year in comparison to the earlier survey. The fishbowl environment of school board procurement versus the absence of that environment among private sector firms, gives contractors greater latitude in specifying vehicles by brand; this is a luxury not widely shared by district fleets.

Meanwhile, in response to a new question added this year, 62.5 percent of all respondents said they also had a chassis preference while 37.5 percent reported no such preference. The high degree of brand preference of chassis in this category of component appears to stem from similar public versus private procurement factors. The response also seems to indicate the industry wants a consolidation of parts.

Computers in Transportation

Computers are becoming increasingly popular within the school bus industry. Fully 54 percent of all operators report that at least one function of their school bus operation is computerized. This data however does not give a complete picture of the widespread use of computers throughout the industry.

Nearly half of the 46 percent who report no computer use say they are in the process of "studying purchasing computer hardware" for their company or district, another 12.7 percent say they are "in the process of installing computer hardware," while 5.8 percent say they contract out their computer needs to software fulfillment companies. Only one-quarter of all school bus operators report they have "little or no interest or need for computerization."

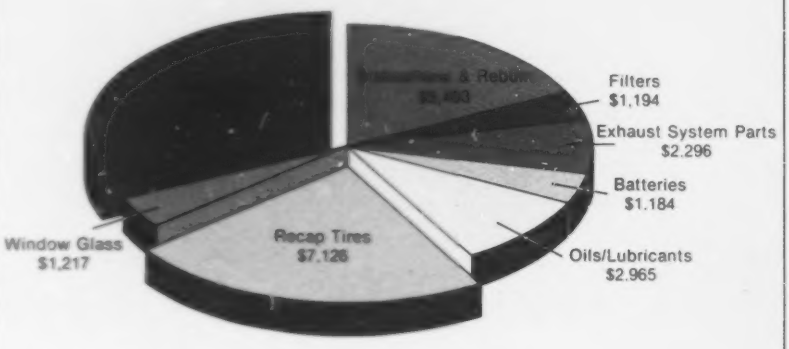
Based on these data it is safe to conclude that about three quarters of the districts and contractors serving pupil transportation have taken the plunge into the world of computers.

The most popular task for computer application is general ledger, accounting, payroll or budget (86 percent), followed by route writing (25.7 percent), maintenance and repair (22.7 percent), fuel and fluid usage (22.7 percent), parts and mechanical inventory (18.8 percent), followed by other unspecified usage (l0.8 percent).

Of those companies which are "wholly or partially computerized" about one-third report they are linked to a district or company-wide mainframe computer, while 56 percent say they utilize micros or personal computers.

Figure 3

Annual Expenditure Replacement Parts



Of the fleets responding to a question about annual expenditure for replacement parts, new and recap tires led the list with batteries being the least common replacement item. (Editor's note: not all respondents answered for each category of product.)

Inventory

The average approximate value of parts inventory did not change much over the past 18 months. Nearly four-fifths, or 79.4 percent of all respondants, reported maintenance parts inventory of $25,000 or less; 18 months ago 77 percent reported the value of their parts inventory at $20,000 or less. This year, however, we asked the industry to report more specifically the value of their inventory, and figure 4 reports that data.

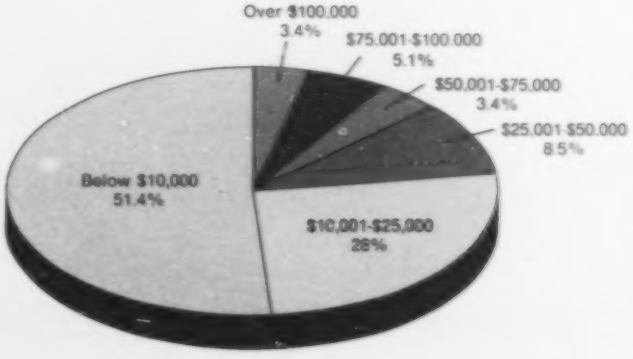
Another new question we asked respondents when we conducted the 1985 survey was the "approximate annual sum your company spends for (eight replacement) items" for their fleets. That data is reported in figure 3 and indicates the amount spent. The average fleet spent more for new tires ($10,037) and recap tires ($7,126), than for any other items; brake parts, both new and replacement, were ranked third (5,403).

More than half, 54 percent, of all conventional school buses are equipped with air brakes while 7.2 percent are equipped with disc brakes; meanwhile 72 percent of operators say they will consider disc brakes on future conventional bus orders. Fear of asbestos is a consideration in the decision to purchase brake linings among 46.5 percent of operators.

Survey results overall indicate subtle shifts of procurement patterns throughout the pupil transportation industry. Two areas appear to offer suppliers the greatest marketing opportunities. First, computers, related peripherals and software. And secondly—though not necessarily tomorrow—buses, due to the fact that within a few years the increasing replacement age of the nation's school bus fleet will result in a a large pool of buses that simply have to be retired—and replaced.

Figure 4

Maintenance Parts Inventory



More than half the school bus fleets nationwide report they maintain inventories of less than $10,000. Respondants were asked to exclude fuel and tires from their estimates.

Insurance: Crisis in the Industry

What are the risks for fleet insurance?

What Are The Risks For Insurance

Year	Total Vehicles	Accidents	Prop. Damage Only Acc.	Annual Bus Mileage
1974	340,000	43,000	39,000	2,400,000,000
1975	350,000	48,000	44,000	2,500,000,000
1976	380,000	51,000	46,000	2,600,000,000
1977	380,000	58,000	55,000	2,900,000,000
1978	380,000	58,000	55,000	3,000,000,000
1979	380,000	60,000	56,000	3,000,000,000
1980	380,000	55,000	50,000	3,000,000,000
1981	380,000	55,000	50,000	3,000,000,000
1982	380,000	56,000	53,000	3,000,000,000
1983	390,000	48,000	46,000	3,000,000,000

Statistics courtesy of National Safety Council Accident Fact Book

National Safety Council's figures show that, although school bus accidents are on the increase, so, too, are the amount of buses used and the number of miles driven annually. Does this really make the school bus industry a greater insurance risk?

On August 15, 1985, the National School Transportation Association's (NSTA) insurance program contract comes to an end. And their insurer has decided not to renew the program's contract. This means that 60 percent of the 1100 members of the NSTA may suddenly be uninsured, with only weeks to go before the new school year begins. One member has already declared that, if he can't get insurance, he will have to close his doors.

"There's an insurance crisis going on right now that is world-wide," said Bill Mortimer of Advanced Risk Management Techniques, risk management consultants for the NSTA. "In 1975 we went through this before, here in the U.S., but now it's a world-wide crisis. And the impact is falling on the commercial risk area."

Because of the harsh repercussions of the crisis—throughout the entire transportation industry— the American Bus Association (ABA) sent a letter on July 2,1985 to Congress, the Senate, the Department of Transportation, and the Interstate Commerce Commission to focus attention on the problem—and hopefully create a fast remedy.

"Bus companies are being hit with astronomical costs," said ABA President Norman Sherlock. "This is an extraordinary condition which threatens to devastate the industry. The ability of the industry could be greatly diminished if no relief is found." Although the ABA is primarily concerned with the health of the intercity bus industry, Sherlock's concern encompasses the school buses as well.

"If the tremendous escalation in insurance rates merely washed out the unsafe and unreliable operators, I would regard it as a beneficial consequence of business conditions, but this is not the case. Good operators are being hard hit too, and there seems to be little correlation, if any, between the renewal rates quoted by insurance companies and the safety record or quality of the companies involved. In any event, it appears that we are now confronted with the prospect that good operators as well as poor operators could be forced out of business by these skyrocketing insurance rates."

How the Crises Began

The crisis started in 1980 when the insurance industry began to heavily underwrite the "soft," highly competitive market of transportation—including all modes of transportation. Primary insurers began cash-flow underwriting. What this means is that, rather than taking in enough money to cover anticipated losses—and creating adequate reserve funds—they were merely taking in enough premiums to raise funds for other investment opportunities, and thus benefit from the high interest payments then available. The game plan was to profit from their investment portfolios and worry about accrued losses in the transportation field later.

At the same time the re-insurance companies (those who insure the risks of the primary, or retail, insurance companies) wanted the investment cash-flow as much as the primary insurance companies did, and that opened the gates wide. Underwriters quickly relaxed their underwriting rules and guidelines. A steam-rolling effect began and, after four years, losses for both primary and re-insurers mounted tremendously. In mid-1984, re-insurers began to rapidly pull out of the market, and the primary insurance firms were suddenly left holding the bag. Their alternative was to raise the rates— drastically.

The insurance industry works on what is termed the "combined ratio" — the total amount of losses vs. the underwriting expenses paid

out. For example, if an insurance company has a loss and expense ratio of 100 percent, they are then paying out a dollar for every dollar they take in. But, according to experts in the industry, the ratios have gone as high as 150 percent in the last few years. Thus, in the fiscal year 1984, the insurance industry's total losses were in excess of $5 billion. Thus, with the reinsurance firms dropping out, the primary insurance companies could not get coverage on what they were insuring.

In order to cover the risks of insuring bus operators—including school bus contractors—many primary firms either raised their rates substantially, or else dropped out of the market as well. Presently there are only four or five primary insurance companies remaining in the transportation market, as compared to the nearly 20 firms in the market a year ago. As for the reinsurance market, it is said that there are only 25 percent—worldwide—remaining to underwrite the primaries, and all are being terribly selective on the amount of primary risk they will insure. As a result, many school bus contracting companies have been or are going to be denied renewal of their insurance, with many being unable to find another insurance firm willing to underwrite them. In the end, these contractors may not be able to operate.

What next?

The effect of all this is felt across the board throughout transportation, including such organizations as the NSTA. Advanced Risk Management Techniques' Bill Mortimer said "I need to find another company to insure the NSTA. The whole NSTA program is a $25-30 million contract annually. We've contacted over 25 insurance companies and none want to do all of the NSTA. They don't want to take on such a large risk right now."

What will Mortimer do? "One alternative," he said, "is for the private operator to insure through the school district's insurance (school districts are usually insured through an 'umbrella coverage'). Another alternative is to contract through another operator who has insurance." Whichever alternative Mortimer comes up with for the NSTA, he has (at the time this article was written) only weeks left to find the solution.

"You have two problems," he said. "One is that the cost of insurance per vehicle has gone up 3-4 times over the past two year period. Most people on fixed price contracts will have to absorb those costs. Those with provisions for extra expenses will be able to pass it on to the district, and the district can then either live with it or go to another contractor.

"The other problem is that those who can't be insured will have to drop out of business."

Dick Harney, president of Palomar Transport, Upland, CA, has been confronted by this problem twice in the past several months alone. According to Harney, Palo-

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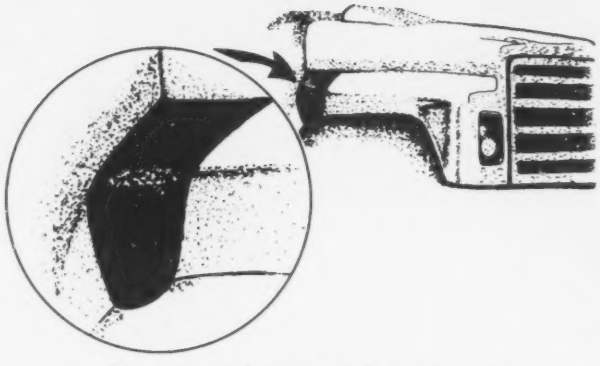

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mar recently renewed its insurance on April 1, 1985. "We went through the national program with the NSTA," he said. "Our rates increased 277 percent. But now we've just found out that the NSTA program's insurance is up in August, so I'm out shopping again. It's at a point where I either get reinsured, or I'll have to close my doors. And if the rates triple again..."

At this point, the big question is just what can be done to endure the crisis. Said Howard Wallach, vice president of human resources at Laidlaw Transportation, "One area that this crisis is causing focus on is in the area of safety. Companies will have to devote a lot of energy and money to safety. We now have safety supervisors on all operations. We're devoted to safety awareness, which helps reduce insurance costs and loses."

However, in escalating both safety factors and in updating maintenance (such as replacing all parts, etc. with new materials), Wallach said, the end result is in higher costs passed on to the school districts. "My feeling," he said, " is that prices will be effected. Ultimately, the person really effected by all this is going to be the taxpayer."

But even a favorable safety record may not be a factor in whether or not a company will stay insured. As Dick Harney of Palomar Transport states: "The insurance companies didn't even look at our safety factors. I have a decent loss ratio, too, but they aren't looking at that either." To top it off, Harney also said Palomar probably can't get coverage through the districts because Palomar's contract says the company must attain their own liability. If Harney decided to work out a new contract, the district would then be free to call for new bids by other companies. As such, Harney, like many other contractors, is again frantically shopping around for insurance.

According to James Holmes of the Morris School District, Morristown, NJ, "Districts are having trouble getting insurance as well."

"We just got another insurance program finally, but it wasn't cheap—they raised it from $649 to $1868 per unit. We had to bare our souls to three different companies before one picked us up. You can't believe how picky they were. Something has to be done with the insurance companies."

Which leads us back to Norman Sherlock of the ABA, and the plea to the Congress, Senate, ICC and DOT. Sherlock's plan is three-fold:

"I can see," Sherlock said, "that the mere focusing on this problem will contribute greatly to a resolution to limitations on liability coverage. Second, we must get legislation designed to give the operator at least 90 days notice on the end of their insurance coverage, and, third, I think we may have to look at a federally backed program, a federally guaranteed risk assigned pool similar to the Federal Deposit Insurance Corp. (F.D.I.C.) used in the banking industry.

"We really must create that dialogue and do something..."

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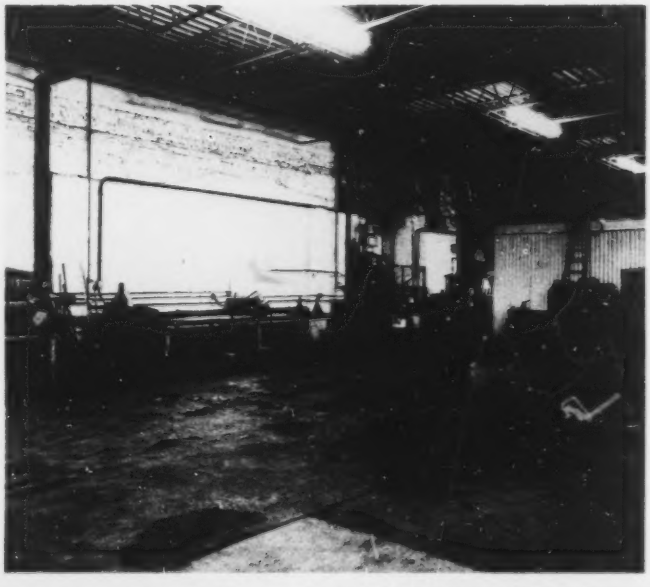

Robert L. Moss
Transportation Supervisor
Walton (N.Y.)
Central School District

Hilly, rural roads in the Catskill Mountain region of New York can be very hard on bus suspension systems, especially in the spring. Just ask Robert Moss. He's been overseeing school transportation in this area for the past 36 years.

"Our buses make 30-mile round trips every school day, some over rough dirt roads. No matter how careful our drivers were, the bus springs were breaking constantly. And when that happens, the vehicle is simply not safe to drive."

Frustrated with the amount of time, labor and money needed to keep his fleet of 24 buses safely on the road, Moss investigated the MOR/ryde suspension system in 1977. The improvement over the past eight years, he says, has been immeasurable.

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SBF's TOP 25

The first SBF "Top 25" survey reveals the largest publicly-owned school bus fleets in the U.S.

A survey of state directors of pupil transportation in 34 states reveals that the 25 school districts operating the largest state- or district-owned fleets — which include all types of school buses -- are located in only 11 states, and that each operates at least 400 buses.

The 34 states in which the state directors of pupil transportation were surveyed by SBF were chosen from a list compiled earlier by SBF which identified states operating more than 5,000 school buses statewide. Additional districts surveyed were identified by bus manufacturers as operating at least 400 school buses.

The 11 states in which these "Top 25" districts are located are: Tennessee, Oklahoma, California, Texas, Alabama, Florida, Louisiana, North Carolina, Virginia, Maryland, and Massachusetts.

This list is the first ever compiled by SBF. The editors plan to make it an annual feature.

Rank	School District	No. of Buses
1.	Los Angeles Unified School District (CA)	1,350
2.	Dallas County School District (TX)	916
3.	Houston School District (TX)	844
4.	Fairfax City School District (VA)	750
5.	Montgomery County School District (MD)	705
6.	Prince George County School District (MD)	678
7.	Wake County School District (NC)	659
8.	Hillsborough County School District (FL)	653
9.	Guilford County School District (NC)	631
10.	Jefferson County School District (KY)	630
11.	Mecklenburg County School District (NC)	628
12.	E. Baton Rouge Parish School District (LA)	620
13.	Duval County School District (FL)	603
14.	Boston Public Schools (MA)	547
15.	Baltimore County School District (MD)	545
16.	Dade County School District (FL)	513
17.	Mobile County School District (AL)	480
18.	Austin School District (TX)	467
19.	Virginia Beach County School District (VA)	450
20.	Caddo Parish School District (LA)	443
21.	Anne Arundel County School District (MD)	435
22.	Cumberland County School District (NC)	429
23.	Metropolitan Davidson County School District (TN)	415
24.	Jefferson Parish (School District (LA)	411
25.	Forsyth County School District (NC)	404

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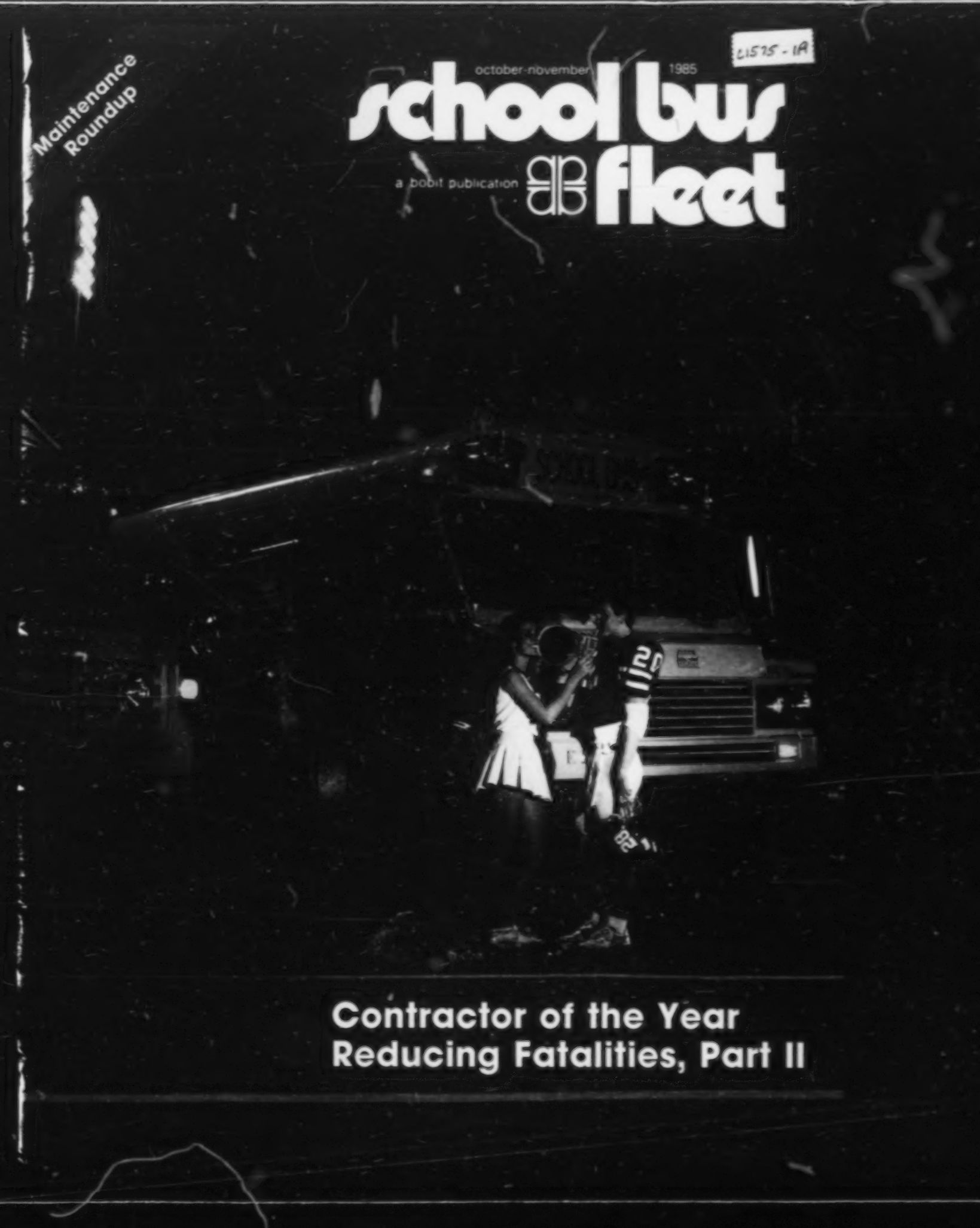
Maintenance Roundup



Contractor of the Year

Reducing Fatalities, Part II

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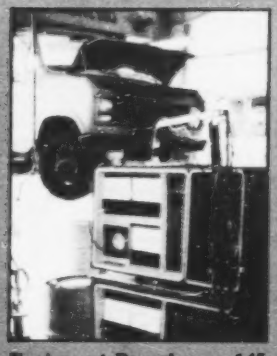

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The Safety of Our Children

In Part II, the author reviews simple techniques to reduce school bus fatalities.

By Lee Comeau

School bus safety is unique from one major standpoint—it involves not one, but four controllable elements: automobile drivers, school bus drivers, bus passengers, and the bus itself. The years have been good to those of us involved in school bus safety. We have consistently witnessed a reduction in the number of fatalities each year. Much has been accomplished by the industry in construction standards since 1977. The same can be said for school bus driver training.

A review of the statistics, however, clearly indicates that in future years the focal point of our attention must be centered around the instruction and training of students — before the installation of 400,000 seat belts in all school buses — if we are genuinely interested in the safety of our children. Remember the French word *triage*, a sorting of priorities. Treat life-threatening conditions before non-life-threatening conditions.

School bus accident data vary from collection agency to collection agency as to how many students are fatally injured each year. But the data are irrefutable as to the number-one cause of student fatalities — improper crossing procedures.

In 1982, the Kansas Department of Transportation in a response from 50 states, reported 28 children killed. All 28 fatalities occurred outside the buses during the process of loading or unloading. Twelve students were struck by the front of their own buses, five by the rear of the buses, and 11 by motorists driving past a stopped school bus. All of the 28 fatalities were the result of human factors (driver and student error), not mechanical defects of the vehicles being driven.

Recent data continue to follow the trend established during the 12-year period of 1970-1981. This period shows that 621 students were killed by their own buses while 252 were killed by passing motorists. Ninety-eight percent of those 621 fatalities occurred *outside* their own school buses. A closer examination of the Kansas DOT data reveals that 69 percent of the students were between 5- to 8-years of age, and 66 percent were travelling home from school when tragedy struck.

"...We must be certain to communicate to the 5-to-8-year-old children and be certain that they understand the dangers inherent with the unloading procedure."

As we can see, human error or behavior plays a very large role in the causes of school bus fatalities. Attention to this data can lead to safety procedures and programs that can dramatically improve the potential for saving student lives. Witness the decline in student school bus fatalities since the inception of driver training programs.

For many of our transportation operations, driver training is the result of the introduction of federal training funds which were made available to the states in 1976. After two years of organizing and implementing driver-training programs with these funds, school bus fatalities took a sharp drop downward. From 1979 to date, fatalities are down more than 33 percent over the last five years. The average per year for 1974-78 was 49; since 1979 the average has dropped to 33. The result is an average of 16 lives saved per year!

Too often we forget that there are *four* controllable factors in the operation of school bus. We have properly addressed two — the bus and the bus driver — in the previous article (*School Bus Fleet* June/July). The time has come to address the remaining two — the student and the public motorist.

Student Training

Since we as transportation professionals and educators have greater control over the student than we do over the public motorist, I believe we should concentrate on educating the student first — the motorist second.

What age group is in need of the greatest assistance? Statistics tell us the 5- to 8-year olds. During what time of the day do they need our assistance the most? Statistics tell us on the return trip home in the afternoon. During what activity do they need our assistance the most?

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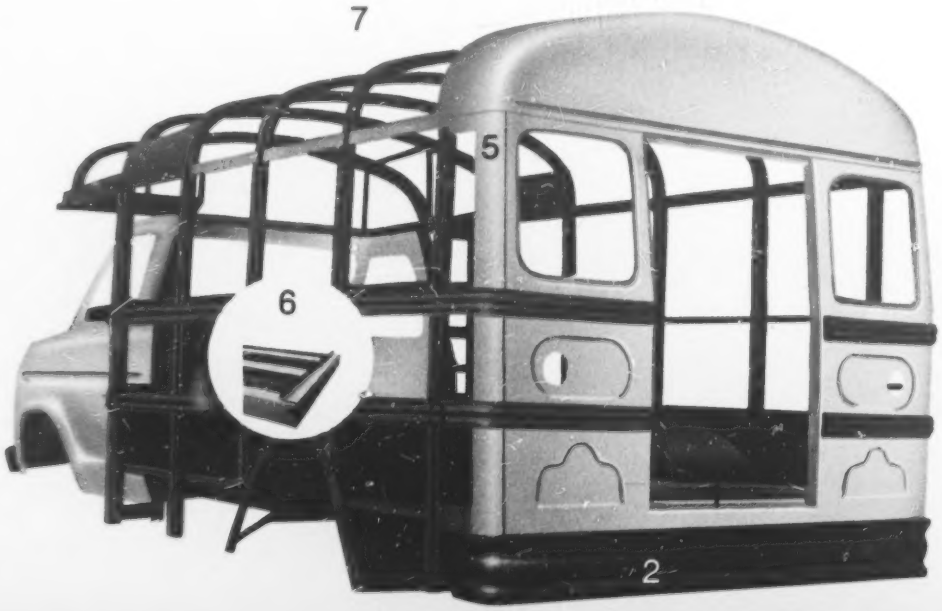

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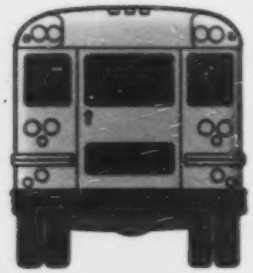
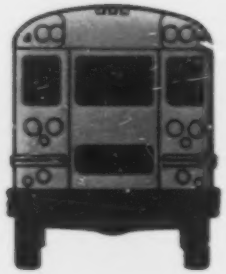


The Minotour offers the same 96-inch width and interior room of full-size conventional school buses.



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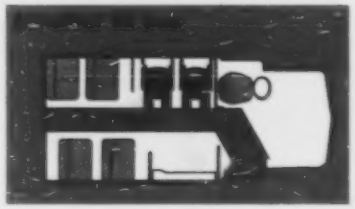
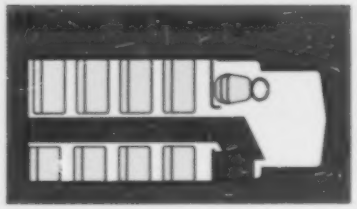
Typical seating plans





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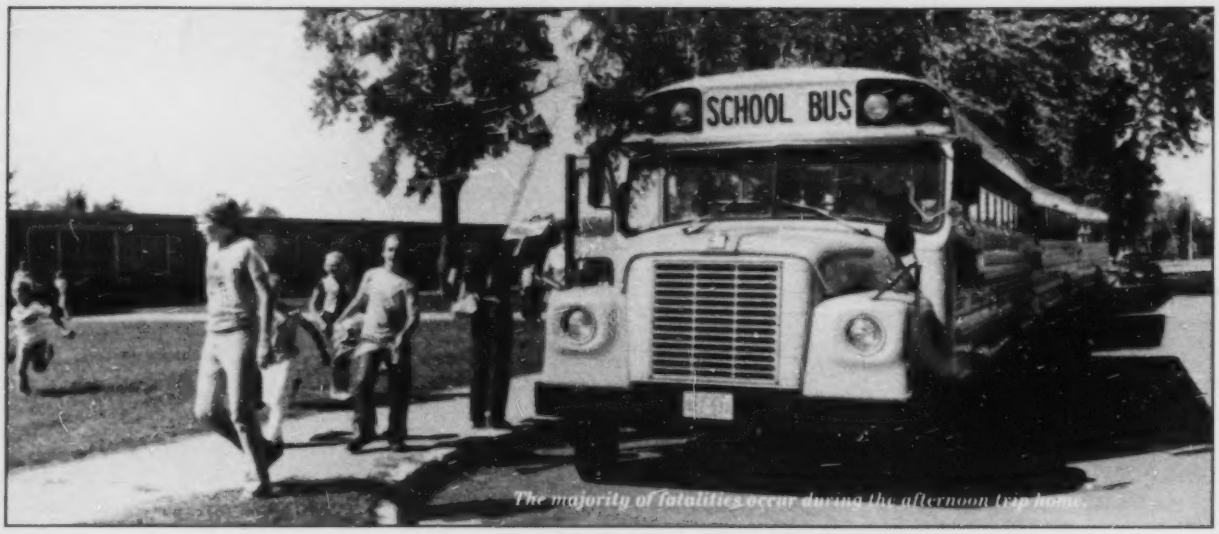

The majority of fatalities occur during the afternoon trip home.

Statistics tell us during the unloading activity, for the majority are killed by their own bus or by passing motorists as they disembark.

How can we help? How can we show that we are genuinely interested in the safety of our children? We know that the majority of our fatalities occur during the afternoon trip home. We also know that children are extremely anxious to return home and that safety procedures are probably the furthest thing from their minds. We can correct this by first reducing the anxiety level. Class schedules and activities need to be examined to determine what affect the last class of the day has on the students' anxiety levels. Do students engage in high-charged activities such as gym and play period, or do they experience low-level, serene activities such as rest period or reading?

The Crosser

Whether a student crosses the road or not is a consequence of the way the bus route is designed.

Designing routes to eliminate or reduce the possibility of crossing the road will have a positive affect on reducing this causative factor of school bus fatalities.

We must communicate with the driver who has a "crosser" on his or her bus. Crossers must be identified as being so on the driver's student passenger list. This may sound crazy if we think only in terms of the driver who drives this crosser every day. "How can the driver not know that he or she has a crosser?" you ask. Most drivers begin driving on the first day of school. How can they know before a child crosses the road whether or not the child is a crosser unless they are told so on the student passenger list? What about the substitute driver who reports to drive on an occasional basis? How is he or she supposed to know who the crossers are? How many fatalities over the past years have occurred because the driver was not aware that the child would be crossing in front of his or her bus? Eliminate this exposure factor — identify all the crossers on your student passenger list.

Failing these things, we must be certain to *communicate* to the 5- to 8-year old children and be certain that they understand the dangers inherent with the unloading procedure during their trip home. We must impress upon them the importance of staying away from their bus after disembarking.

Many students return to the area of the bus to pick up a dropped object. We must reduce the chances of the children dropping objects by requiring them to consolidate all of their possessions in a knapsack or daypack. As they leave the bus, the children can wear the daypack, thus keeping their hands free of any objects that they might drop. Ad-

School Children Killed

	1980	1981	1982	1983
Going to School	4	9	6	6
Activity Trip	0	0	0	0
Coming Home	24	28	22	25
No Information	2	0	0	0
Total	**30**	**37**	**28**	**31**

Children Killed by Vehicle Passing Bus

	7	11	11	8

Childs Position When Killed

Front of Bus	16	19	12	15
Back of Bus	5	7	5	8

Source: K-DOT Loading/Unloading Survey.

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The driver can speak to each "crosser" and remind him or her of proper procedures.

ministrators and parent organizations must solicit the help of the parents in this matter. Children whose parents cannot afford knapsacks should be given one. There are many fund-raising activities that can generate the necessary monies for such a worthwhile program.

After addressing the problem of dropped objects, the message of how to cross properly in front of a school bus must be communicated properly and repeated over and over and over. Particular emphasis must be placed on the the importance of the student looking both ways before leaving the protection of the school bus. Too often, children have become dependent on the flashing red lights that are supposed to control traffic, but which too often do not. If traffic is not controlled, the child is not necessarily left helpless *if* he or she has been educated to observe the flow of traffic *and* has been educated on what procedures to follow in the event he or she observes a car bearing down.

Communication

Posters illustrating loading and unloading procedures should be placed in close proximity to the doorway of each classroom of this 5- to 8-year old age group. The retention span of such young children is limited, and the excitement of going home complicates matters further. The school authorities to whom these children have been en-

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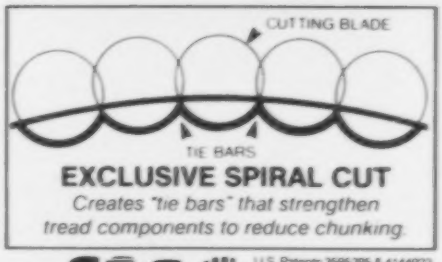

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trusted are the last ones who have an opportunity to communicate with these children before they are returned to the custody of their parents. We must seize upon every opportunity we have in order to get this important safety message to the students.

The ultimate opportunity that we have to communicate this life saving message is at the moment when the children leave the bus. We can do this in two ways:

•The driver can speak to each crosser and remind him or her of the proper procedure as the child departs from the bus.

•We can also post the aforementioned diagram at the front of the bus so that it is in clear view of the students as they ride home and as they walk toward the front of the bus to disembark.

Many of us have ridden on mass transit buses. How often have we glanced around at the messages from Proctor and Gamble, Marlboro, or the American Cancer Society? What more important message could we pass on to these children than the message of safety?

The opportunity is here and now. Try these suggestions, give your children the benefit of the doubt. We have little to lose; but they have much to lose. I have never seen the safety diagram in any of the over 1,000 classrooms I have been in and out of. I have not seen the diagram posted in any more than 40 of the some 4,000 school buses that I have been on. Has the time come for our bus body manufacturers to permanently inscribe this critical message on the inside of all bus bodies? Is a Federal regulation necessary to mandate the same, or are we concerned enough to act independent of outside influences? As we review the figures of the last 10 years, we must remember that the last space occupied by these fatalities was that space in or around the school bus. The last people to have had an opportunity to communicate with or influence their actions were their school authorities.

"Too often, children have become dependent on the flashing red lights that are supposed to control traffic, but don't."

Are we genuinely interested in the safety of our children? If we are, the war against fatalities is well on its way to being won. Those ultimately responsible for the victory are our federal and state legislators, school administrators, and all transportation professionals who have dedicated their lives to this very challenging profession.

Let us stop fighting the skirmish of seat belts on school buses and concentrate on the war against fatalities outside the school bus. Let us all work together to significantly reduce those numbers we read and agonize over year after year.

Lee Comeau is a pupil transportation consultant for the New York State Department of Education.

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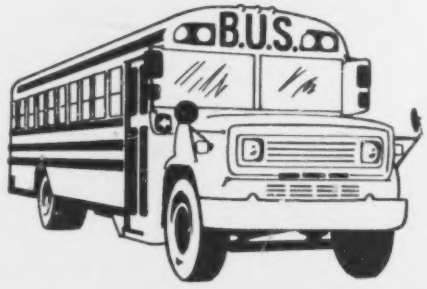

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